

500
CANADA



AIR REGULATIONS

1920

With which are printed the Air Board Act,
the Convention relating to International
Air Navigation, and certain Directions
given and Forms approved for use under
the Regulations.



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9-10 GEORGE V.

CHAP. 11.

An Act to authorize the Appointment of an Air Board for the control of Aeronautics.

[Assented to 6th June, 1919.]

HIS Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1 This Act may be cited as *The Air Board Act*.

Short title.

2. (1) There shall be a Board on Aeronautics (herein called the "Air Board") which shall consist of not less than five and not more than seven members, who shall be appointed by the Governor in Council.

Air Board.

(2) The Governor in Council shall appoint a member of the Air Board who is one of the Ministers of the Crown to be Chairman of the Board, and shall appoint one of the other members of the Air Board to be Vice-chairman.

Chairman and Vice-chairman.

(3) One member of the Air Board shall be appointed as a representative of the Department of Militia and Defence and one as a representative of the Department of the Naval Service.

Representatives of Militia and Defence and Naval Service Depts. Term of office.

(4) The members of the Air Board shall be appointed for a term of three years, and shall be eligible for reappointment.

(5) The members of the Air Board shall be paid such salaries as the Governor in Council may determine.

Salaries.

3. It shall be the duty of the Air Board,—

Duties of Air Board.

- (a) to supervise all matters connected with aeronautics;
- (b) to study the development of aeronautics in Canada and in other countries, and to

- undertake such technical research as may be requisite for the development of aeronautics, and to co-operate with other institutions in carrying out such research;
- (c) to construct and maintain all Government aerodromes and air stations, including all plant, machinery and buildings necessary for their efficient equipment and upkeep;
 - (d) to control and manage all aircraft and equipment necessary for the conduct of any of His Majesty's services;
 - (e) to operate such services as the Governor in Council may approve;
 - (f) to prescribe aerial routes;
 - (g) to co-operate with other officers of His Majesty, and to assist in the carrying out of any services under their jurisdiction which may require aerial work of any nature, and to collaborate with the officers employed in existing air services of His Majesty in such extension of their present work as the development of aeronautics may require;
 - (h) to take such action as may be necessary to secure, by International Regulation or otherwise, the rights of His Majesty in respect of His Government of Canada in International Air Routes;
 - (i) to co-operate with the officers of the Departments of Militia and Defence and of the Naval Service on all questions relating to the air defence of Canada;
 - (j) to co-operate with the Air staffs or authorities of other Governments or countries for any purposes pertaining to air services;
 - (k) to investigate, examine and report on all proposals for the institution of commercial air services within or partly within Canada or the limits of the territorial waters of Canada;
 - (l) to consider, draft, and prepare for approval by the Governor in Council such regulations as may be considered necessary for the control or operation of aeronautics

in Canada or within the limits of the territorial waters of Canada; and,
(m) to perform such other duties as the Governor in Council may from time to time impose.

4. (1) Subject to approval by the Governor in Council, the Air Board shall have power to regulate and control aerial navigation over Canada and the territorial waters of Canada, and in particular, but not to restrict the generality of the foregoing terms of this section, it may, with the approval aforesaid, make regulations with respect to,—

Powers of
Air Board
to make
regulations
with approval
of Governor
in Council.

- (a) licensing pilots and other persons engaged in the navigation of aircraft, and the suspension and revocation of such licenses;
- (b) the registration, identification, inspection certification and licensing of all aircraft;
- (c) the licensing inspection and regulation of all aerodromes and air-stations;
- (d) the conditions under which aircraft may be used for carrying goods, mails and passengers, or for the operation of any commercial service whatsoever, and the licensing of any such services;
- (e) the conditions under which goods, mails and passengers may be imported and exported in aircraft into or from Canada or within the limits of the territorial waters of Canada, or may be transported over any part of such territory;
- (f) the prohibition of navigation of aircraft over such areas as may be prescribed, either at all times or at such times or on such occasions only as may be specified in the regulation, and either absolutely or subject to such exceptions or conditions as may be so specified;
- (g) the areas within which aircraft coming from any places outside of Canada are to land, and the conditions to be complied with by any such aircraft;
- (h) aerial routes, their use and control;
- (i) the institution and enforcement of such laws, rules and regulations as may be

deemed necessary for the safe and proper navigation of aircraft in Canada or within the limits of the territorial waters of Canada; and,

(j) organization, discipline, efficiency and good government generally of the officers and men employed under the Air Board.

Penalty.

(2) Any person guilty of violating the provisions of any such regulation shall be liable, on summary conviction, to a fine not exceeding one thousand dollars, or to imprisonment for any term not exceeding six months, or to both fine and imprisonment.

Publication of regulations.

(3) All regulations enacted under the provisions of this Act shall be published in the *Canada Gazette*, and, upon being so published, shall have the same force in law as if they formed part of this Act. Such regulations shall be laid before both Houses of Parliament within ten days after the publication thereof if Parliament is then sitting, and if Parliament is not then sitting, then within ten days after the next meeting thereof.

Officers and men.

5. The Air Board shall have power to employ such officers and men under this Act as may be authorized by the Governor in Council, under such conditions as to discipline and pay as the Governor in Council may determine, and may make such arrangements for their proper training, housing, board, clothing and equipment as may be deemed necessary and as may be approved by the Governor in Council.

Civil staff.

6. Subject to the provisions of *The Civil Service Act, 1918*, the Air Board shall have power to employ such officers, clerks and employees as may be necessary for attending to the business of the Air Board.

Payment of expenses, etc., under Act.

7. All salaries mentioned herein and all expenses incurred under the provisions of this Act shall be paid out of such money as may be appropriated by Parliament therefor.

AIR REGULATIONS, 1920.

Approved by the Governor in Council on the 31st day of December, 1919, pursuant to the Air Board Act, 9-10 Geo. V, Chap. 11, and taking effect on the 17th day of January, 1920, being the date of their publication in the Canada Gazette.

PART I.

SHORT TITLE AND INTERPRETATION.

1. These regulations may be cited as The Air Regulations, 1920.

2. In these regulations, unless the context otherwise requires:—

- (a) "Aircraft" includes airships, flying machines, balloons (whether fixed or free) and kites. *See I.C., Annex D.**
- (b) "Airship" means an aircraft designed to be lighter than air and having means of propulsion. *See I.C., Annex D.*
- (c) "Balloon" means an aircraft designed to be lighter than air and having no means of propulsion. *See I.C., Annex D.*
- (d) "Flying machine" means an aircraft designed to be heavier than air and having means of propulsion. *See I.C., Annex D.*
- (e) "Flying" or "in flight" in relation to an aircraft means that the aircraft is off every supporting surface. *New.*
- (f) "Under way" in relation to an airship means that the aircraft is not made fast to any object on land or water. *See I.C., Annex D.*
- (g) "Taking off" in relation to a flying machine means and includes the act of abandoning the support of a surface capable of supporting it and the immediately preceding and following acts; in relation to an airship or free balloon it means and includes the act of

[*References are to the Convention relating to International Air Navigation printed below at pages *et seq.*

freeing the airship or free balloon from restraint, and the immediately preceding and following acts. *New.*

(h) "Alighting" in relation to a flying machine means and includes the act of coming in contact with a surface capable of supporting flying machines, and the immediately preceding and following acts; in relation to an airship or free balloon it means and includes the act of bringing the airship or free balloon under restraint, and the immediately preceding and following acts. *New.*

(i) "Airharbour" means and includes:—

(i) any building or other work, whether floating or fixed, used or purposely adapted for the construction, repair, handling, protection, refueling or storage of aircraft designed to alight on water when such building or other work is adjacent to water upon which aircraft constructed, repaired, handled, protected, refueled or stored in, at, or by such building or work alight or from which they take off, together with the adjacent area of water.

(ii) any area of supporting surface other than water used or purposely adapted for the alighting or taking off of aircraft, together with any buildings or other works connected therewith,

excepting, however, any such building, work or area used as aforesaid:—

(i) only owing to stress of weather or other emergency, or

(ii) only for the domestic or household purposes of the owner of the building, work or area, and not used or intended to be used for commercial purposes or for the alighting or taking off of commercial aircraft. *New.*

(j) "Seaplane station" means an airharbour for flying machines, the supporting surface at which is water. *New.*

(k) "Aerodrome" means an airharbour for flying machines, the supporting surface at which is not water. *New.*

(l) "Airship harbour" means an airharbour for airships or balloons. *New.*

- (m) "Customs airharbour" means an airharbour appointed by the Air Board with the concurrence of the Ministers of Customs and Immigration as an airharbour at which aircraft from abroad may alight, and from which aircraft bound abroad may take off. *See I.C., Art. 15; Annex H, 1.*
- (n) "State," in relation to aircraft, means that the aircraft belongs to and is exclusively employed in the service of the Dominion of Canada, of one of the Provinces of Canada, or of some other of His Majesty's dominions. *New.*
- (o) "Passenger," in relation to an aircraft, means an aircraft engaged in the carriage of a passenger or passengers for hire or reward, or available for hire for the purpose of such carriage. *New.*
- (p) "Freight," in relation to an aircraft flying without as well as within Canada, means an aircraft engaged in the carriage of goods for hire or reward, or available for hire for the purpose of such carriage, but, in relation to an aircraft flying only within Canada, is limited to such an aircraft when one or more persons are carried in addition to the pilot.* *New.*
- (q) "Commercial" in relation to an aircraft means an aircraft used for the purpose of any profession, trade or business when one or more persons are carried in addition to the pilot, but does not include a passenger and a freight aircraft as above defined.* *New.*
- (r) "Pilot" in relation to an aircraft includes the person in charge thereof.* *New.*
- (s) "Air engineer" means a person who is the holder of a certificate issued by the Air Board certifying that he is competent to inspect and overhaul aircraft. *New.*
- (t) "Night" means between half an hour after sunset and half an hour before sunrise, except in flights beyond Canada when it means between sunset and sunrise. *See I.C., Annex D. 1.*
- (u) "Visible" in relation to lights means visible on a dark night with a clear atmosphere. *See I.C., Annex D. I.*

(2) The Interpretation Act (R.S.C. (1906), c. 1) shall apply to the interpretation of these regulations. *New.*

* The effect of these provisions is that an air craft, although registered only as a private aircraft, may be used for the carriage of freight or for business purposes if the Pilot flies alone.

PART II.

REGISTRATION AND MARKING.

3. Except aircraft flown only for the purpose of experiment or test within three miles of an airharbour, kites and fixed balloons, no aircraft shall fly unless it has been registered as herein provided. *See I.C., Art. 5.*

4. Subject as hereinafter provided, the Air Board may define the conditions under which, and the mode in which aircraft may be primarily registered in Canada. *New.*

5. No aircraft shall be primarily registered in Canada unless it belongs wholly to a British subject or British subjects, or to a company which has been incorporated in His Majesty's Dominions, and of which the president or chairman and at least two-thirds of the directors are British subjects. *See I.C., Art. 7.*

6. No aircraft shall be primarily registered in Canada while it is so registered in any other of His Majesty dominions, or in any foreign country, but it may be primarily registered in Canada upon cancellation of an earlier registration in such other dominion or foreign country. *See I.C., Art. 8.*

7. No aircraft shall be primarily registered in Canada unless either it has been built or made in Canada or any customs duties which are or would become payable upon the importation of the aircraft into Canada have been paid. *New.*

8. An aircraft may be secondarily registered in Canada upon notification being given by any of His Majesty's dominions, or by any foreign country with which Canada has made a convention providing for such notification, that such aircraft has been registered in such one of His Majesty's dominions or foreign country, provided, however, that such aircraft shall fly only subject to such limitations as are imposed by the law of the Dominion or foreign country in which it has been primarily registered and that no aircraft not primarily registered in Canada or in some other of His Majesty's dominions shall engage in the carriage of persons or goods for hire between places in Canada. *See I.C., Arts. 9, 16.*

9. Upon every primary registration in Canada a certificate of registration shall be issued for which there shall be payable a fee of five dollars. Such certificate shall lapse after two weeks from any change in the ownership of the aircraft. *See I. C., Annex A, I (d).*

10. It shall be a condition of the primary registration in Canada of any aircraft that, upon the Governor in Council declaring that a national emergency exists or is immediately apprehended, every such aircraft shall be subject to requisition in the name of His Majesty by the Air Board or any officer of the Canadian Air Force, and upon being so requisitioned shall become the property of His Majesty subject to its return or to the payment of compensation or to both as may be provided by law. *New.*

(2) The registration in Canada of any aircraft primarily registered in any of His Majesty's Dominions other than Canada shall be subject to the like condition unless, under the law of that one of His Majesty's dominions in which the aircraft was primarily registered, it is subject to a paramount right to be requisitioned on His Majesty's behalf. *New.*

11. Any certificate of registration of an aircraft may be suspended or cancelled at any time by the Air Board for cause. *New.*

12. No aircraft primarily registered in Canada shall fly beyond Canada unless it has been certified as airworthy by the Air Board, and no commercial aircraft shall fly within Canada unless it has been certified as airworthy by the Air Board, if it has been primarily registered in Canada, or, if it has been secondarily registered in Canada, then by the Air Board or by the proper authority in that one of His Majesty's dominions or foreign country in which it is primarily registered. *See I.C., Art. 11.*

13. Certificates of airworthiness may be issued by the Air Board, and may be limited to flying in specified areas, on specified routes, for specified periods, and upon compliance with specified conditions. *New.*

14. A fee of five dollars shall be payable for a certificate of airworthiness of an aircraft conforming to a type an example of which has been certified as airworthy in any of His Majesty's dominions or in any foreign country with which Canada has made a convention providing for the

reciprocal acceptance of certificates of airworthiness. A fee of twenty five dollars shall be payable for a certificate of airworthiness to any other aircraft. *New.*

15. No aircraft required to be registered shall fly unless it bears the prescribed nationality and registration marks. *See I.C., Art. 10.*

16. In the case of an aircraft primarily registered in Canada the nationality mark shall be the letter "G" and the registration mark the assigned combination of four capital letters commencing with the letter "C." The marks shall be painted in black on a white ground in the following manner:—

- (a) On flying machines the marks shall be painted once on the lower surface of the lower main planes and once on the upper surface of the top main planes, the top of the letters to be towards the leading edge. They shall also be painted along each side of the fuselage between the main planes and the tail planes. In case the machine is not provided with a fuselage the marks shall be painted on the nacelle.
- (b) On airships the marks shall be painted near the maximum cross section on both sides so as to be visible both from the sides and from the ground and on the upper surface equidistant from the letters on the sides.
- (c) On balloons the marks shall be painted on two sides near the maximum cross section so as to be visible both from the sides and ground, and on the upper surface equidistant from the marks on the sides.
- (d) On flying machines and airships the nationality mark shall also be painted on the right and left sides of the lower surface of the lowest tail planes or elevators and also on the upper surface of the top tail planes or elevators, whichever are the larger. It shall also be painted on both sides of the rudder or on the outer sides of the outer rudders if more than one rudder is fitted.
- (e) On balloons the nationality mark shall also be painted on the basket.
- (f) The nationality and registration marks need in no case exceed eight feet in height, but subject to this provision they shall be as hereafter specified.
- (g) On flying machines the height of the marks on the main planes and tail planes respectively shall be

equal to four-fifths of the chord, and in the case of the rudder shall be as large as possible. The height of the marks on the fuselage or nacelle shall be four-fifths of the depth of the narrowest part of that portion of the fuselage or nacelle on which the marks are painted.

- (h) On airships the nationality marks painted on the tail plane shall be equal in height to four-fifths of the chord of the tail plane and on the rudder the marks shall be as large as possible. The height of the other marks shall be equal at least to one-twelfth of the circumference at the maximum transverse cross section of the airship. On balloons the height of the nationality mark on the basket shall be four-fifths of the height of the basket, and the height of the other marks shall be equal to at least one-twelfth of the circumference of the balloon.
- (i) The width of the letters shall be two-thirds of their height and the thickness shall be one-sixth of their height. The letters shall be painted in plain block type and shall be uniform in shape and size. A space equal to half the width of the letters shall be left between the letters.
- (j) Except on state and commercial aircraft, the nationality and registration marks shall be underlined with a black line. The thickness of the line shall be equal to the thickness of the letter and the space between the bottom of the letters and the line shall be equal to the thickness of the line.
- (k) Where the nationality and registration marks appear together, a hyphen of a length equal to the width of one of the letters shall be painted between the nationality mark and registration mark.
- (l) The nationality and registration marks shall be displayed to the best possible advantage, taking into consideration the constructional features of the aircraft. The marks must be kept clean and visible.
See I.C., Annex A.

17. All aircraft, except kites, shall carry affixed to the car or to the fuselage in a prominent position a metal plate inscribed with the names and residences of the owners and the nationality and registration marks of the aircraft.
See I.C., Annex A, I (d).

PART III.

AIRHARBOURS.

18. No place, building, or work shall be used as an airharbour unless it has been licensed as herein provided. *New.*

19. Licenses to airharbours may be issued by the Air Board and may be made subject to such conditions respecting the aircraft which may make use of the airharbour, the maintenance thereof, the marking of obstacles in the vicinity which may be dangerous to flying and otherwise, as the Air Board may direct. *New.*

20. A fee of ten dollars shall be payable for a license for an airharbour. *New.*

21. The license of an airharbour may be suspended or cancelled by the Air Board at any time for cause and shall cease to be valid two weeks after any change in the ownership of the airharbour, unless sooner renewed to the new owner. *New.*

22. Every licensed airharbour shall be marked by day and by night as may be from time to time directed by the Air Board. *See I.C., Annex F, II.*

23. The owner of any licensed airharbour shall be permitted to charge for the use of the harbour or for any services performed only such fees as have been approved by the Air Board for such airharbour. The tariff shall be prominently posted up at the airharbour. *New.*

24. No person shall without authority of the Air Board.—

(a) mark any unlicensed surface or place with any mark or display any signal calculated or likely to induce any person to believe that such surface or place is an airharbour or emergency alighting ground.

(b) knowingly use or permit the use as an airharbour of any unlicensed place.

(c) knowingly use or permit the use of an airharbour for any purposes other than those for which it has been licensed.

(2) The onus of proving the existence of any authority or license shall be upon the person charged. *New.*

25. No water-craft shall cross or go upon that part of the water area forming part of any seaplane station which it is necessary to keep clear of obstruction in order that flying machines may take off and alight in safety, having regard to the wind and weather conditions at the time, and every person in charge of a water-craft is guilty of a breach of these regulations if such craft crosses or goes upon such area after reasonable warning by signal or otherwise. *New.*

26. There shall be kept at every licensed airharbour a register in which there shall be entered immediately after the alighting or taking off of an aircraft a record showing the nationality and registration marks of such aircraft, the name of the pilot and the hour of such alighting or taking off. *New.*

27. Every licensed airharbour, and all aircraft and the goods therein shall be open to the inspection of any customs or immigration officer or any officer of or other person authorized by the Air Board, but no building used exclusively for purposes relating to the construction of aircraft or aircraft equipment shall be subject to inspection except upon the special written order of the Chairman or Vice-Chairman of the Air Board. *New.*

28. It shall be a condition of every license to any airharbour that in case the Governor-in-Council declares that a national emergency exists or is immediately apprehended, the owner of such airharbour shall comply with such directions, if any, with respect to the use of the airharbour as may be given by the Air Board or an officer of the Canadian Air Force, subject only to the payment of such compensation as may be provided by law. *New.*

29. At every licensed airharbour the direction of the wind shall be clearly indicated by one or more of the recognized methods, e.g., alighting tee, conical streamer, smudge fire, etc. *See I.C., Annex D, 40.*

30. At every licensed aerodrome and seaplane station there shall by day be a flag hoisted in a prominent position which shall indicate that if a flying machine about to alight finds it necessary to make a circuit or partial circuit such circuit shall be left-handed (anti-clockwise) or right-handed (clockwise) according to the colour of the flag. A white flag shall indicate a right-hand circuit, *i.e.*, that the flag is kept to the right side or side which carries the green

light of the aircraft, and a red flag shall indicate a left-hand circuit, *i.e.*, that the red flag is kept to the left side or side which carries the red light of the aircraft. *See I.C., Annex D, 36.*

31. At every aerodrome and seaplane station licensed for use by the public at night there shall at night be exhibited a red light to indicate a left-hand circuit or a green light to indicate a right-hand circuit. *See I.C., Annex D., 46 (a).*

32. Every licensed aerodrome shall be considered to consist of three zones when looking up-wind. The right-hand zone shall be the taking-off zone and the left-hand shall be the alighting zone. Between these two there shall be a neutral zone. If the centre of the aerodrome is marked, the taking off and alighting zones shall commence fifty yards to the right and left respectively of the centre of such mark. *I.C., Annex D, 44.*

PART IV.

PERSONNEL.

33. No person shall act as pilot of any aircraft or as navigator, engineer or inspector of any commercial aircraft, or of any aircraft primarily registered in Canada when flying outside Canada unless such person holds a certificate issued by the Air Board authorizing him to so act. *See I.C., Art 12.*

(2) This paragraph shall not apply,—

(a) to persons under instruction flying over water or, with the consent of the owner or owners, over an air-harbour and such additional surrounding area as is approved by the Air Board, or

(b) to pilots, navigators and engineers of aircraft secondarily registered in Canada, who hold certificates authorizing them to act as such, issued by that one of His Majesty's dominions or by the foreign country in which the aircraft is primarily registered. *See I.C., Art. 13.*

34. Certificates to pilots, navigators and engineers may be issued by the Air Board and may be limited in

time and to flying only under specified conditions, for specified purposes, in specified types of aircraft, on specified routes or otherwise. *New.*

35. Certificates to inspectors may be issued by the Air Board and may be limited in time, to specified types of aircraft, or otherwise. *New.*

36. A fee not exceeding \$5 may be charged for any certificate issued under this Part IV. *New.*

37. No certificate shall be issued authorizing any person who is not a British subject to act as pilot, navigator, engineer or inspector of passenger, freight, commercial or state aircraft and it shall be a condition of every such certificate that the holder shall be a member of the Canadian Air Force and shall perform such military training or other duty as may be required. *New.*

38. A certificate issued to any pilot, navigator, engineer or inspector may be suspended, or cancelled at any time by the Air Board for cause, including the failure to comply beyond Canada with the provisions of Parts V., VI., VII., and VIII. of these regulations. *New.*

PART V.

LIGHTS.

39. The angular limits laid down in the following regulations shall be determined when the aircraft is in its normal attitude on a straight horizontal course. *See I.C., Annex D, I.*

40. The rules concerning lights shall be complied with in all weathers at night, and during the night no other lights which might be mistaken for the prescribed lights shall be exhibited. The prescribed lights must not be dazzling. *See I.C., Annex D, 1.*

41. A flying machine when in flight or manoeuvring on land or water under its own power, shall carry the following lights:—

(a) Forward, a white light, visible in a dihedral angle of two hundred and twenty degrees bisected by a

- vertical plane through the line of flight, and of such a character as to be visible at a distance of at least five miles;
- (b) On the right side, a green light, so constructed and fixed as to show an unbroken light between two vertical planes, whose dihedral angle is one hundred and ten degrees when measured to the right from dead ahead, and of such a character as to be visible at a distance of at least three miles;
 - (c) On the left side, a red light, so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is one hundred and ten degrees when measured to the left from dead ahead, and of such a character as to be visible at a distance of at least three miles;
 - (d) The said green and red sidelights shall be fitted so that the green light shall not be seen from the left side, nor the red light from the right side;
 - (e) At the rear, and as far aft as possible, a white light shining rearwards, and visible in dihedral angle of one hundred and forty degrees bisected by a vertical plane through the line of flight and of such a character as to be visible at a distance of three miles.
 - (f) In the case where, in order to fulfill the above conditions the single light has to be replaced by several lights, the field of visibility of each of these lights should be so limited that in no case can more than one be seen at a time. *See I.C., Annex D, 2.*

42. The rules as to the lighting of flying machines shall apply to airships, subject to the following modifications:—

- (a) All lights shall be doubled, the forward and aft lights vertically, and the side lights horizontally in a fore and aft direction.
- (b) Both lights of each pair forward and aft shall be visible at the same time.
- (2) The distance between the lights comprising a pair shall not be less than seven feet. *See I.C., Annex D, 3.*

43. An airship when being towed shall carry the lights required to be carried by an airship in flight and in addition those required to be carried by airships not under control. *See I.C., Annex D, 4.*

44. A flying machine or airship when on the surface of the water and not under control, that is to say, not able to manoeuvre as required by the Regulations for Preventing Collisions at Sea, shall not carry its navigation lights but shall carry two red lights not less than seven feet apart in a vertical line one over the other, and of such a character as to be visible all round the horizon at a distance of at least two miles. *See I.C., Annex D, 5.*

45 In order to prevent collision with surface craft,—

(a) A flying machine when at anchor or moored on the water shall carry forward where it can best be seen a white light so constructed as to show an unbroken light visible all round the horizon at a distance of at least one and one half miles.

(b) A flying machine of fifty yards or upwards in length, when at anchor or moored on the water, shall in the forward part of the flying machine carry one such light, and at or near the stern of the flying machine, and at such a height that it shall be not less than five yards lower than the forward light, another such light. The length of a flying machine shall be deemed to be the overall length.

(c) Flying machines of fifty yards or upwards in span, when at anchor or moored on the water, shall carry in addition at each lower wing tip one such light as specified in clause (a) of this rule. The span of a flying machine shall be deemed to be the maximum lateral dimension. *See I.C., Annex D, 11.*

46. An airship, which from any cause is not under control, or which has voluntarily stopped her engines, shall, in addition to the other specified lights, display conspicuously two red lights, one over the other approximately in a vertical line, not less than seven feet apart and constructed to show a light in all directions and of such a character as to be visible at a distance of at least two miles.

(2) By day an airship, when being towed, or which from any cause is not under control, shall display conspicuously two black balls or shapes, each twenty-four inches in diameter, placed one over the other not less than seven feet apart.

(3) An airship moored, or underway, but having voluntarily stopped its engines, shall display conspicuously

by day a black ball or shape twenty-four inches in diameter, and shall be treated by other aircraft as being not under control. *See I.C., Annex D, 6.*

47. A free balloon shall carry one bright white light below the car at a distance of not less than twenty feet and so constructed as to show an unbroken light in all directions and of such a character as to be visible at a distance of at least two miles. *See I.C., Annex D, 7.*

48. A fixed balloon shall carry in the same position as the white light mentioned in the last preceding paragraph, and in lieu of that light, three lights in a vertical line one over the other, not less than seven feet apart. The highest and lowest of these lights shall be red, and the middle light shall be white, and they shall be of such a character as to be visible in all directions at a distance of at least two miles.

(2) In addition the mooring cable shall have attached to it at intervals of one thousand feet, measured from the basket, groups of three lights similar to those mentioned in the preceding paragraph. In addition, the object to which the balloon is moored on the ground shall have a similar group of lights to mark its position.

(3) By day the mooring cable shall carry in the same positions as the groups of lights mentioned in the preceding paragraph, and in lieu thereof, tubular streamers, not less than eight inches in diameter and seven feet long, and marked with alternate bands of white and red twenty inches in width. *See I.C., Annex D, 8.*

49. An airship, when moored near the ground shall carry the forward and after white lights required to be carried while the airship is under way. In addition, if moored but not near the ground, the airship, and mooring cable, and the object to which moored, shall be marked by day or by night with the streamers or lights required in the case of a fixed balloon.

(2) Sea anchors or drogues used by airships for mooring purposes at sea are exempt from this rule. *See I.C., Annex D, 9.*

50. A flying machine stationary on land but not anchored or moored, shall carry the lights required when in flight. *See I.C., Annex D, 10.*

51. In the event of the failure of any of the lights specified under these rules to be carried by aircraft flying at night, such aircraft shall alight at the first reasonably safe opportunity. See *I.C., Annex D, 12.*

PART VI.

SIGNALS.

52. The call sign of an aircraft shall be the complete group of five letters constituting its nationality and registration marks. See *I.C., Annex A, I (a).*

53. Aircraft proposing to alight at night at airharbours licensed for use by the public at night shall before alighting fire a green Very's light or flash a green lamp, and in addition shall make by international Morse code the letter group forming its call sign. Permission to alight will be given by the repetition of the same call sign from the ground, followed by the firing of a green Very's light, or the flashing of a green lamp.

(2) Pending such an increase in the amount of night traffic by air as to render it necessary to name that one of several flying machines which is to alight first, it shall not be necessary in Canada to make the call sign either from the air or from the ground. See *I.C., Annex D, 14 (a).*

54. The firing of a red Very's light or the display of a red flare from the ground shall be taken as an instruction that aircraft are not to alight. *I.C., Annex D, 15.*

55. An aircraft compelled to alight at night shall, before alighting, fire a red Very's light, or make a series of short flashes with the navigation lights. *I.C., Annex D, 16.*

56. When an aircraft is in distress and requires assistance, the following signals shall be used or displayed, either together or separately,—

(a) The international signal, SOS, by means of visual or wireless signals;

(b) The international code flag signal of distress, indicated by NC;

- (c) The distant signal, consisting of a square flag, having either above or below it a ball, or anything resembling a ball;
- (d) A continuous sounding with any sound apparatus;
- (e) A signal, consisting of a succession of white Very's lights, fired at short intervals. *I.C., Annex D., 17.*

57. To warn an aircraft that it is in the vicinity of a prohibited zone and should change its course, the following signals shall be used:—

- (a) By day, three discharges at intervals of 10 seconds of a projectile showing, on bursting, white smoke, the location of the burst indicating the direction the aircraft should follow;
- (b) By night, three discharges at intervals of 10 seconds of a projectile showing, on bursting, white stars, the location of the burst indicating the direction the aircraft should follow. *I.C., Annex D, 18.*

58. To require an aircraft to alight, the following signals shall be used:—

- (a) By day, three discharges at intervals of 10 seconds of a projectile showing on bursting black or yellow smoke.
 - (b) By night, three discharges, at intervals of 10 seconds of a projectile showing on bursting red stars or lights.
- (2) In addition, when necessary to prevent the alighting of aircraft other than the one ordered, a searchlight which shall be flashed intermittently shall be directed towards the aircraft whose alighting is required. *I.C., Annex D, 19.*

59. An airship to which is made a signal to alight, and which is unable to do so by stress of weather or other unavoidable cause shall make the following signals:—

- (a) By day, show from the place where they can be most clearly seen from below, a red triangular flag, and two black balls arranged vertically.
- (b) By night, wave a white light, at the same time extinguishing the side lights. *New.*

60. In the event of fog or mist rendering an airharbour invisible, its position may be indicated by a balloon acting as an aerial buoy or by other means approved by the Air Board. *See I.C., Annex D, 20 (a).*

61. In fog, mist, falling snow or heavy rainstorm whether by day or night, an aircraft on the water shall make the following sound signals with a sound apparatus:—

- (a) If not anchored or moored, a sound at intervals of not more than two minutes, consisting of two blasts of about five seconds duration with an interval of about one second between them, or
- (b) If anchored or moored, the rapid ringing of an efficient bell or gong for about five seconds at intervals of not more than one minute. *See I.C., Annex D, 20*

62. Except as provided in Part V and in this part, no lights or signals shall be shown or markings displayed shown unless the same have been approved by the Air Board. *See I.C., Annex D, 11, 51.*

PART VII.

RULES OF THE AIR.

63. Flying machines shall always give way to balloons, fixed or free, and to airships. Airships shall always give way to balloons, whether fixed or free. *I. C., Annex D, 21.*

64. An airship when not under its own control, shall be classed as a free balloon. *I.C., Annex D, 22.*

65. Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing and angle of elevation of an approaching aircraft. If neither the bearing nor the angle of elevation appreciably change, such risk shall be deemed to exist. *I.C., Annex D, 23.*

66. The term "risk of collision" shall include risk of injury due to undue proximity of other aircraft. Every aircraft that is required by these rules to give way to another to avoid collision shall keep a safe distance, having regard to the circumstances of the case. *I.C., Annex D, 24.*

67. While observing the rules regarding risk of collision contained in the last preceding paragraph, a motor driven

aircraft must always manoeuvre according to the rules contained in the following paragraphs as soon as it is apparent that, if it pursued its course, it would pass at a distance of less than 200 yards from any part of another aircraft. *See I.C., Annex D, 25.*

68. When two motor-driven aircraft are meeting end on, or nearly end on, each shall alter its course to the right. *I.C., Annex D, 26.*

69. When the two motor driven aircraft are on courses which cross, the aircraft which has the other on its own right side shall keep out of the way of the other. *I.C., Annex D, 27.*

70. An aircraft overtaking any other, shall keep out of the way of the overtaken aircraft by altering its own course to the right, and not in the vertical plane.

(2) Every aircraft coming up with another aircraft from any direction more than one hundred and ten degrees from ahead of the latter, *i.e.*, in such a position with reference to the aircraft which it is overtaking, that at night it would be unable to see either of that aircraft's sidelights, shall be deemed to be an overtaking aircraft; and no subsequent alteration of the bearing between the two aircraft shall make the overtaking aircraft a crossing aircraft within the meaning of these rules, or relieve it of the duty of keeping clear of the overtaken aircraft until it is finally past and clear.

(3) As by day the overtaking aircraft cannot always know with certainty whether it is forward or abaft this direction from the other aircraft, it should, if in doubt, assume that it is an overtaking aircraft and keep out of the way. *See I.C., Annex D, 28.*

71. Where by any of these rules one of the two aircraft is to keep out of the way, the other shall keep its course and speed. When in consequence of thick weather or other causes, the aircraft having the right of way finds itself so close that collision cannot be avoided by the action of the giving-way aircraft alone, it shall take such action as will best aid to avert collision. *I.C., Annex D, 29.*

72. Every aircraft which is directed by these rules to keep out of the way of another aircraft shall, if the circumstances of the case admit, avoid crossing ahead of the other. *I.C., Annex D, 30.*

73. In following an officially recognized air route every aircraft, when it is safe and practicable, shall keep to the right side of such route. *I.C., Annex D, 31.*

74. Aircraft on land or water about to take off shall not attempt to take off until there is no risk of collision with alighting aircraft. *See I.C., Annex D, 32.*

75. Every aircraft manoeuvring under its own power in the water shall conform to the Regulations for Preventing Collisions at Sea, and for the purpose of those regulations shall be deemed to be a steam vessel, but shall carry the lights specified in these rules, and not those specified for steam vessels in those Regulations and shall not use, except when in distress, fog, mist, falling snow or heavy rainstorm or be deemed to hear, the sound signals specified therein. *I.C., Annex D, 49.*

76. Every aircraft in a cloud, fog, mist, or other conditions of bad visibility, shall proceed with caution, having careful regard to the existing circumstances and conditions. *I.C., Annex D, 33.*

PART VIII.

TRAFFIC IN THE VICINITY OF LICENSED AERODROMES AND SEAPLANE STATIONS.

77. A flying machine alighting or taking off at a licensed aerodrome shall conform to the circuit indicated by the flag or light shown. *See I.C., Annex D, 36.*

78. When a flying machine takes off from a licensed aerodrome it shall not turn until 550 yards distance from the nearest point of the aerodrome, and the turning then made must conform with the circuit regulation. *See I.C., Annex D, 37.*

79. A flying machine alighting at a licensed aerodrome shall, from a distance of at least 550 yards from the leeward side of alighting zone, maintain a course directly towards such zone. *New.*

80. All flying machines flying within twelve hundred yards horizontal distance from the nearest point of

a licensed aerodrome shall conform to the circuit law, unless such flying machines are flying at a greater height than six thousand feet. *See I.C., Annex D, 38.*

81. Acrobatic alightings are prohibited at licensed aerodromes. Flying machines are prohibited from indulging in aerial acrobatics within a distance in any direction of at least six thousand feet from the nearest point of the aerodrome. *See I.C., Annex D, 39.*

82. Every flying machine when taking off or alighting at a licensed aerodrome shall do so up-wind, except when the natural conditions of the aerodrome do not permit. *See I.C., Annex D, 41.*

83. At a licensed aerodrome every flying machine shall commence to take off from the extreme leeward point of the taking-off zone. *New.*

84. In the case of flying machines approaching a licensed aerodrome for the purpose of alighting, the flying machine flying at the greater height shall be responsible for avoiding the flying machine at the lower height, and shall, as regards alighting, observe the rules governing overtaking aircraft. *See Annex I.C., D, 42.*

85. Flying machines showing signals of distress shall be given free way in attempting to alight at a licensed aerodrome. *See I.C., Annex D, 43.*

86. A flying machine when alighting at a licensed aerodrome should alight as near as possible to the neutral zone, but in any case on the left of any flying machines which have already alighted. After slowing up or coming to a stop at the end of its alighting run a flying machine will immediately taxi into the neutral zone. Similarly a flying machine taking off shall keep as far as possible towards the right of the taking off zone, but shall keep clear to the left of any flying machines which are taking off or about to take off. *See I.C., Annex D, 44.*

87. No flying machine shall be allowed to remain in the alighting or the taking off zone longer than is necessary for the purpose of alighting or taking off. *New.*

88. No flying machine shall commence to take off until the preceding flying machine is clear of the aerodrome. *See I.C., Annex D, 45.*

89. No balloon, kite or airship shall be elevated in the vicinity of a licensed aerodrome except when authorized by regulation or with the permission of the Air Board. See *I.C., Annex D, 47.*

90. The rules governing traffic on and in the vicinity of licensed aerodromes shall apply to traffic in the vicinity of licensed seaplanes stations with the following modifications and addition:

(a) The following rules governing traffic in the vicinity of licensed aerodromes shall not apply:—Paragraphs 78 (flying machines not turning until 550 yards distance.); (flying machines alighting to maintain a direct course from 550 yards distance); 82 (flying machines within certain limits conforming to circuit law); 86 (flying machines landing near neutral zone and moving in to such zone); 88 (flying machines not commencing to take off till preceding flying machine is clear).

(b) A flying machine taxiing up-wind at a licensed seaplane station shall give way to a seaplane taxiing down-wind. *New.*

91. A copy of this part shall be posted at every licensed aerodrome and seaplane station.

PART IX.

DANGEROUS FLYING.

92. No aircraft shall fly over any city or town except at such an altitude as will enable the aircraft to alight outside the city or town should the means of propulsion fail through mechanical breakdown or other cause.

93. No person in any aircraft shall—

- (a) carry out any trick flying over any city or town area or populous district; or
- (b) carry out any trick flying or exhibition flying over any regatta, race meeting, or meeting for public games or sports, except when especially arranged for in writing by the promoters of such regatta or meeting; or
- (c) carry out any flying which, by reason of low altitude or proximity to persons or dwellings, is dangerous to public safety; or

- (d) drop or cause or permit to be dropped from an aircraft any article capable of causing injury or damage, or any ballast except water or fine sand. *New. See I.C., Annex D, 35.*
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PART X.

INTERSTATE FLYING.

94. Except the sections set out in the first schedule hereto, the provisions of the Customs Act, and especially the provisions relating to vessels, their captains or masters, shall apply to aircraft and their pilots, and the sections specified in the second schedule hereto shall be read as extending and applying to aircraft entering or departing from Canada, or to goods imported into or exported from Canada by air, as the context may require. *New.*

95. The expression "port of entry" in the Customs Act shall, in relation to air navigation, mean customs airharbour. *New.*

96. Every aircraft upon entering Canada from abroad shall make its first alighting at a customs airharbour, and every aircraft proceeding abroad from Canada shall take off from a customs airharbour and shall not again alight in Canada without first completing its journey abroad. *See I.C., Art. 15, Annex H.*

97. Customs airharbours shall be notified in *The Canada Gazette* and to such of His Majesty's dominions and such foreign states as may request such notification. *New.*

98. No aircraft entering Canada from abroad or proceeding abroad from Canada shall carry any explosives or any arms or munitions of war. *See I.C., Art. 26.*

99. No goods shall be unladen from any aircraft arriving in Canada from any place out of Canada until due entry has been made of such goods and warrant granted for the unloading of the same.

(2) No goods shall be so unladen except between sunrise and sunset and on some day not being a Sunday or statutory holiday and at some hour and place at which an officer of the customs is appointed to attend the unloading of goods,

or at some place for which a sufferance has been granted by the collector or other proper officer for the unloading of such goods. *See Customs Act, s. 13.*

100. If any goods are brought in any aircraft from any place out of Canada to any customs airharbour therein and not unladen, but it is intended to convey such goods to some other customs airharbour in Canada in the same aircraft there to be unladen, the duty shall not be paid or the entry completed at the first airharbour but at the airharbour where the goods are to be unladen and to which they shall be conveyed accordingly under such conditions and with such security or precautions for compliance with the Customs Act as the Minister of Customs from time to time directs. *See Customs Act, s. 20.*

101. Upon the arrival at any customs airharbour in Canada from any place out of Canada of any aircraft not primarily registered in Canada which it is intended shall proceed to another airharbour in Canada, or beyond Canada, due entry shall be made of such aircraft or such security given for the departure of such aircraft from Canada as may be required under any special or general direction given by the Minister of Customs. *See Customs Act, s. 23.*

102. Every importer of goods by air from any place out of Canada shall within three days after arrival of the importing aircraft make due entry inwards of such goods and land the same. *See Customs Act, s. 24.*

103. Equipment purchased or supplied for any aircraft primarily registered in Canada or the expenses of repairs made out of Canada to any such aircraft shall, on the arrival in Canada of the aircraft within one year after the repairs have been made or the equipment purchased or supplied, be liable to entry and the payment of duty on the cost thereof out of Canada at the following rates:—

(a) on the expenses of repairs twenty-five per cent *ad valorem* less two per cent for each month since the repairs were made.

(b) on equipment the same rate of duty as if the articles were imported into Canada in the ordinary course.

(2) If the owner or pilot of the aircraft will fully and knowingly neglects or fails to report, make entry and pay duties as by this paragraph required, the aircraft with her tackle, apparel and furniture shall be seized and forfeited.

(3) If, however, the owner or pilot of the aircraft furnishes satisfactory evidence that the aircraft was compelled by stress of weather or casualty to land out of Canada to make the said repairs in order to secure the safety of the aircraft or to enable her to reach her port of destination, the Minister of Customs may authorize a refund of the duty on the repairs and the aircraft shall not be liable to forfeiture under this paragraph. *See Customs Act, s. 70; I.C., Art. 19.*

104. The pilot of every aircraft bound outwards from any customs airharbour in Canada to any place out of Canada shall deliver to the collector or other proper officer a report outwards under his hand of the destination of such aircraft stating her name or nationality and registration mark, the name of the pilot and such other particulars of the aircraft and her cargo, passengers and crew as may be required.

(2) The pilot shall also before the aircraft takes off bring and deliver to the collector or other proper officer a list of the passengers and a content in writing under his hand of the goods laden and the names of the respective shippers and consignees of the goods with the marks and numbers of the packages or parcels on the same and shall make and subscribe a declaration to the truth of such content as far as any of the particulars can be known to him. *See Customs Act, s. 96; I.C., Art. 19.*

105. No aircraft shall depart from any customs airharbour to any place out of Canada until the collector or other proper officer has made out and given to the pilot a certificate of the clearance of such aircraft for her intended voyage. *See Customs Act, s. 98.*

106. The Minister of Customs may define and limit the kind, quantity and class of goods which may be delivered out of warehouse as aircraft stores, and also the kind, quantity and class of goods arriving in Canada as stores of aircraft which may be used free of duty on board such aircraft in Canada, or which may be treated as surplus stores of aircraft, and any such goods within the definition or limitation so established may be delivered out of warehouse as aircraft stores for any aircraft bound on a voyage to any place out of Canada upon proof being made by affidavit of the owner or pilot or his agent to the satisfaction of the proper officer that the stores are necessary and

intended for the purposes aforesaid. *See Customs Act, s. 105.*

107. For the purpose of the levying of any duty or of any law relating to the customs,

- (a) the importation of any goods by air shall be deemed to have been completed from the time the aircraft alighted in Canada;
- (b) the exportation of any goods from Canada by air shall be deemed to have commenced from the time of the legal shipment of such goods for exportation after due entry outwards;
- (c) the date of exportation of goods in an aircraft to Canada from any place out of Canada shall be deemed to be the date at which the aircraft carrying such goods took off from such place out of Canada for its destination in Canada, which date may be established by the production of the clearance of the aircraft from such place out of Canada or the oath of the pilot as to the date of taking off if such taking off was subsequent to the date of the clearance;
- (d) The time of the arrival of any aircraft at a Canadian airharbour shall be deemed to be the time at which report of such aircraft was, is or ought to have been made;
- (e) The time of the departure of any aircraft from a Canadian airharbour shall be deemed to be the time of the last clearance of such aircraft on the voyage on which she departed. *See Customs Act, s. 106.*

108. If any aircraft entering Canada is forced by accident or stress of weather or other unavoidable cause to alight elsewhere than at a customs airharbour, the pilot shall forthwith report the fact to the person in charge of the airharbour, if the alighting is made at an airharbour, or in any other case to a peace officer, and it shall be the duty of the person in charge of the airharbour or of the peace officer as the case may be,—

- (a) to satisfy himself, so far as may be possible, that no goods or persons have been moved from or have left the immediate vicinity;
- (b) to prevent the removal of any goods which or the departure of any persons who, have arrived in any such aircraft, and

(c) to report the arrival of the aircraft to the nearest officer of customs.

Provided, however, that the pilot of the aircraft forced to alight may report directly to an officer of customs, if he can do so forthwith after alighting. *See Customs Act, s. 122.*

109. The officer of customs to whom the alighting elsewhere than at a customs airharbour of an aircraft entering Canada from abroad is reported shall give such directions as may be required with regard to the departure of the persons or the removal of the goods arriving therein and such directions shall be complied with by the persons concerned. He, or some other person authorized by him shall, before the departure of the aircraft, verify by his signature the entry of the alighting made in the journey log book. *See Customs Act, ss. 122, 123.*

110. Fresh fish or other perishable goods, coin or bullion may be unladen without entry or warrant, as may also goods in any wrecked aircraft, provided that they are duly reported to a customs officer, unladen with his permission and in his presence, and checked by him. *See Customs Act, s. 135.*

PART XI.

GENERAL PROVISIONS.

111. No passenger aircraft shall carry any explosives. No aircraft shall carry any mails without the written authority of the Postmaster-General and no aircraft primarily registered in Canada shall carry any radio-telegraph or telephone apparatus without the written authority of the Air Board. *See I.C., Art. 14, 26.*

112 No person shall install or work a radiotelegraph or telephone apparatus in any aircraft primarily registered in Canada except in accordance with the terms of a license granted by the Minister of the Naval Service, and no person shall work any radio-telegraph apparatus on any aircraft except in accordance with the provisions of the International Radio-Telegraph Convention and the Service Regulations annexed thereto. *Sec. 3-4 Geo. V, c. 43.*

113. No aircraft shall fly over, or so near, any area defined by Order in Council as a prohibited area under these regulations or so near thereto that the angle between the perpendicular and a line from the aircraft to the nearest point of such prohibited area is less than fifty degrees. *See I.C., Art. 3.*

114. No passenger, freight or commercial flying machine shall fly on any day unless it has previously been inspected on that day by an air engineer, or until such air engineer has signed certificates of the fitness of the flying machine to fly and the certificates have been countersigned by the pilot. A certificate shall be entered in the log book of the aircraft and the log book of each engine and duplicates thereof may be delivered to the owner of the aircraft. *New.*

115. The pilot of every passenger, freight or commercial aircraft shall before taking off after every alighting enter in the aircraft log book the weight of the load carried. He shall be responsible that the load does not exceed that specified in the certificate of registration and that it is properly secured. *New.*

116. Every aircraft carrying five persons or more and bound on a flight by night, or on a continuous flight overland between two points more than 300 miles apart, or on a flight over sea between two points more than 125 miles apart, shall have on board a person holding a navigator's certificate. *See I.C., Annex E, IV.*

117. An aircraft may be required to alight by any officer of or other person authorized by the Air Board or by any officer of customs or immigration or by any officer of the Canadian Air Force on duty as such, and every aircraft to which a signal to alight is made shall forthwith do so at the nearest practicable place to that from which the signal to alight is made, unless the signal is made from within a prohibited area in which case the aircraft shall alight as near as practicable to, but not within, such area. *See I.C., Art. 15.*

(2) Any person not within one of the classes described in this paragraph who, without good and sufficient cause, makes any signal to alight shall be guilty of a breach of these regulations, and the onus shall be upon such person to establish that he had such good and sufficient cause. *New.*

118. Every aircraft in flight shall have on board its certificate of registration, the certificate of airworthiness, if any, the certificates of all the members of the crew requiring certificates, the authority and license for the equipment and working of the wireless installation, if any, and a journey log book containing the following particulars:—

- (a) The category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner; the name of the maker and the carrying capacity of the aircraft.
- (b) In addition for each journey:—
 - (i) The names, nationality and residences of each of the members of the crew;
 - (ii) The place, date, and hour of departure, the route followed, and all incidents of the journey, including alightings. *See I.C., Art. 19.*

119. Every passenger freight or commercial aircraft in flight shall also have on board:—

- (a) An aircraft log book which shall contain the following particulars:—
 - (i) Category to which the aircraft belongs; its nationality and registration marks; full name, nationality and residence of the owner; name of maker; carrying capacity of the aircraft;
 - (ii) Type and series number of engine; type of propeller showing number, pitch, diameter and maker's name;
 - (iii) Type of wireless apparatus fitted;
 - (iv) Table showing the necessary rigging data for the information of persons in charge of the aircraft and of its maintenance;
 - (v) A fully detailed engineering record of the life of the aircraft, including all acceptance tests, overhauls, replacements, repairs and all works of a like nature.
- (b) An engine log book for each engine, which shall contain the following particulars:—
 - (i) Type of engine, series number, maker's name, power, normal and maximum revolutions of engine, date of production and first date put into service;

- (ii) Registration mark and type of aircraft in which the engine has been installed;
- (iii) A fully detailed engineering record of the life of the engine, including all acceptance tests, hours run, overhauls, replacements, repairs, and all work of a like nature.

(c) A signal log book which shall contain the following particulars:—

(i) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner.

(ii) Place, date, and time of the transmission or reception of any signal.

(iii) Name or other indication of the person or station to whom a signal is sent or from whom a signal is received.

(2) Entries in log books shall be made in ink as soon as possible after the events they record. Entries to be made in the journey and signal log books may be first made in a rough note book, but shall be permanently entered within 24 hours after the events recorded. The first entries in the aircraft and engine log books shall be made by the constructor; subsequent entries in these log books and all entries in other log books shall be made by the pilot or other competent person. All entries shall be signed by the person by whom they are made. No erasures shall be made in, nor any leaf torn from any log book.

(3) A copy of the certificate of registration shall be kept in the pocket at the end of the aircraft log book. *See I.C., Art. 19.*

(4) Log books shall be preserved for two years after the last entry. *See I.C., Art. 20.*

120. A copy of the two last preceding paragraphs shall be inserted in every log book. *See I.C., Annex C IV.*

121. The owner of every passenger freight or commercial aircraft shall annually, on or before the 31st day of January in each year, make a return to the Secretary of the Air Board, giving such particulars with regard to the operation of the aircraft as the Air Board may prescribe. *New.*

122. Every person required to hold a certificate under these regulations, and the owner or pilot of any aircraft,

or the owner of any airharbour, shall produce his certificate or the certificate or license issued in respect of such aircraft or air-harbour at any time on demand by any peace officer or any officer of customs or immigration or any officer of or other person authorized by the Air Board. The owner or pilot of an aircraft shall produce, upon the like demand, all log books (including any rough note books) and other papers kept in relation to such aircraft. *New.*

123. Any cancelled or expired certificate or license shall be forthwith delivered up by the person to whom it was issued. *New.*

124. No foreign military aircraft shall fly over or alight in Canada except with the express written permission of the Air Board. *See I.C., Art. 33.*

125. If any aircraft flies in breach of these regulations the owner of the aircraft, as well as the pilot thereof and any other member of the crew who has been a party to the breach, shall be liable therefor. If a breach of these regulations relates to the use of an airharbour, the owner, as well as the person in charge thereof, shall be liable, if such owner permitted or could reasonably have prevented the breach. *New.*

126. The owner of an aircraft or the owner of an airharbour, as the case may be, shall be liable for any damages for which the pilot or any member of the crew of such aircraft or the person in charge of such airharbour becomes liable by reason of any act or omission in connection with the navigation of such aircraft or the management of such airharbour or by reason of any breach of the regulations relating to such aircraft or airharbour. *New.*

127. Any person who obstructs or impedes any person in the exercise of his powers and duties under these regulations shall be guilty of a breach thereof. *New.*

128. Failure to observe or comply with the conditions upon which any certificate or license is issued shall be deemed to be a breach of these regulations. *New.*

The owner of every aircraft shall upon notice by mail to his registered address from any officer or other person authorized by the Air Board advise such officer or other person of the then condition and station of the aircraft. *New.*

129. If any person is killed or injured because of or on board any aircraft, it shall be the duty of the pilot and of the owner thereof forthwith to report the date and place of the accident by telegram and full particulars thereof by mail to the Secretary of the Air Board, but the performance of these obligations by either the pilot or the owner shall absolve the other of them. *New.*

130. The Air Board may constitute, or authorize the constitution of, boards of enquiry of one or more members for the purpose of investigating the circumstances of any accident or of any alleged breach of these regulations on the part of any person holding any certificate or license thereunder, and any board of enquiry so constituted shall have power to take evidence upon oath or otherwise.

(2) Every person required to give evidence before a board of enquiry shall attend and give evidence upon being so required by writing under the hand of any member of the board.

(3) Any person who attends and gives evidence before any such board of enquiry shall be entitled to receive for his fees and expenses the same amount as he would have been entitled to receive if he had been required to attend before the Superior Court of the province in which he is called upon to give evidence. *New.*

131. Nothing in these regulations shall exonerate any aircraft, or the owner or any member of the crew thereof, from liability for any neglect to carry lights or signals, to keep a proper look-out or to take any other reasonable precaution. *See I.C., Annex D, 50.*

132. In construing these regulations due regard shall be had to all dangers of navigation and collision, and to any special circumstances which render a departure therefrom necessary in order to avoid immediate danger, and it shall be a good defence to any proceedings for a breach of these regulations if it is proved to have been due to stress of weather or other unavoidable cause. *See I.C., Annex D. 34.*

133. These regulations do not apply:—

(a) to military aircraft of His Majesty when manoeuvring as directed by an officer of any British Air Force in the course of his duty as such officer, or

- (b) to foreign military aircraft flying over or alighting in Canada in accordance with the terms of the prescribed special permission, or
- (c) to other aircraft or to airharbours to the extent to which they have been relieved by the Air Board from compliance therewith. *New.*

134. These regulations shall come into force forthwith upon their publication in the *Canada Gazette*, but no proceeding shall be commenced against any person founded upon any breach thereof committed within four months after the date of such publication except with the written consent of the Air Board. *New.*

135. The regulations approved by Order in Council dated the 7th day of July, 1919 (P.C. 1379) are hereby cancelled. *New.*

FIRST SCHEDULE.

Sections of the Customs Act, R.S. C. (1906), c. 48, as amended by the 6-7 Ed. VII, c. 10 and 7-8 Ed. VII, c. 19, not applicable to aircraft or to goods imported into or exported from Canada by air.

Section.	Subject.	Refer to Air Regulations paragraph
13	Unloading only after entry, etc.....	99
17	Report of vessel arriving by inland navigation	Nil.
20	Goods not to be landed at first port.....	100
22	Importation in vehicles prohibited at certain times.....	Nil.
23	Importation in vehicles or by foot passengers—procedure.....	101
24	Duty of importers.....	102
38	Vessels entering Gulf of Annapolis.....	Nil.
39	" " Great Bras d'Or or Little Bras d'Or.....	Nil.
70	Duty on repairs and equipment.....	103
73	Damage to goods in transit in vehicles.....	Nil.
96	Entry outwards.....	104
98	Clearance.....	105
103	Goods as stores.....	106
116	Time of importation and exportation.....	107
122	Procedure in case of unloading due to damage.....	108, 109
123	" " " "	"
125	Goods which may be landed without entry.....	110
192	Importation in vehicles at prohibited hours.....	Nil.

SECOND SCHEDULE.

Sections of the Customs Act applicable to aircraft entering or departing from Canada or to goods imported into or exported from Canada by air, as the context requires.

Section.	Subject.
72	Damage in transit.
100	Entry outwards.
101	Obligations incurred by entry for export.
102	Upon what evidence obligations cancelled.
237	Entering goods outward and not exporting.
239	Carrying goods out of limits of port of outward entry before entry.
241	Failure to make report and entry of goods shipped in Canada.

FORMS.

The following forms have been approved by the Air Board in the exercise of the jurisdiction conferred upon it by the Air Regulations, 1920, to fix the terms upon which certificates and licenses to aircraft, airharbours and personnel may be issued, and to direct the manner in which airharbours shall be marked. The directions therein contained are consequently of authority, and breach of the conditions upon which any certificate or license is issued constitutes a breach of the Regulations, and is punishable under section 4 (2) of the Air Board Act.

Such of the forms as appear to be likely to be generally required have been printed for use and may be obtained upon application to the Secretary of the Air Boards Ottawa, but any of the forms may be typewritten a, required.

A.B. 11.

CANADA AIR REGULATIONS, 1920.

APPLICATION FOR REGISTRATION OF AN AIRCRAFT.*

(To be sent in in duplicate.)

The Secretary,
The Air Board,
Ottawa.

Application is hereby made for the registration under the Air Regulations, 1920, (including Certificate of Airworthiness, if required), of the Aircraft described below.

There is enclosed \$5.00 for the registration and \$..... for the Certificate of Airworthiness (**not required for a Private Aircraft.**)

The particulars given below are true in every respect

Signature of Applicant.....

Date of Application.....

OWNER, OR OWNERS OF AIRCRAFT.

Name in Full. (IN BLOCK CAPITALS)	Permanent Address.	Nationality.
.....
.....
.....

IF OWNER IS A COMPANY.

NAMES OF DIRECTORS, ETC.

Name in Full. (IN BLOCK CAPITALS)	State Whether President, Chairman, or Director	Address.	Nationality.
.....
.....
.....

Purpose for which aircraft is to be used, (**STATE, COMMERCIAL, PASSENGER, FREIGHT, or PRIVATE**).....

Usual Station.....

Date of Manufacture or Reconstruction.....

Crew Required.....

Accommodation for what number of Passengers.....

DESCRIPTION OF AIRCRAFT.

Heavier than, or Lighter than Air..... Made by.....
Type..... Maker's No.....

	In Flight.	Reduced or Folded for Storage.
Span or breadth o/a in feet.....
Length o/a in feet.....
Height o/a in feet.....
Cubic Capacity (of Airship or Balloon).....
Weight Equipped, but without load, fuel or oil.....
Maximum Safe Load in Lbs.....	Air speed.....	Miles per hour.....

*See I.C., Arts. 5-10, Annex A.

EQUIPMENT (give number and type.)

1. Instruments.....
2. Gauges.....
3. Lights.....
4. Signals.....
5. Fire Extinguishers.....
6. Parachutes.....
7. Tools.....
8. Other Equipment.....

ENGINES.	Engine No. 1.	Engine No. 2.	Engine No. 3.	Engine No. 4.
Name of Type.....				
Pusher or Tractor.....				
Right or Left Hand.....				
No. of Cylinders.....				
H.P.....				
Bore.....				
Stroke.....				

REGISTRATION.

(Not to be filled in by Applicant.)

Aircraft Inspected on.....
 Particulars, accurate as corrected.....
 Modifications from Type are indicated on annexed Sheet.
 Registration recommended with the following special conditions.....

Date.....

Signature.....

Registration approved and Registration Mark G.-C.....allotted.

Registration ^{approved}
(or not approved) for reasons annexed......
Superintendent Certificate Branch.

A.B. 12.

No.....
File No.....

CANADA AIR REGULATIONS, 1920.

CERTIFICATE OF REGISTRATION OF AIRCRAFT.*

This certifies that the Aircraft described below has been inspected and *certified as **Airworthy**, and has been registered under the Air Regulations, 1920.

It is authorized to fly by day * and night as a
Aircraft, with the equipment specified.

This certificate is subject to the Air Regulations, 1920, and will be avoided by any unauthorized change in the design or equipment of the Aircraft, or by any breach of the conditions hereunder expressed.

*To be struck out if inapplicable.

PARTICULARS AND CONDITIONS OF REGISTRATION OF AN AIRCRAFT.

Registration Mark.....
Kind of Aircraft..... Made by.....
Type..... Maker's No.....

	In Flight.	Reduced or folded for storage.
Height in feet.....		
Length in feet.....		
Breadth in feet.....		
Capacity in Cubic Feet.....		
Weight equipped without load, fuel or oil.....		
Crew to be carried.....		
Number of passengers allowed.....		
Weight fully loaded, not to exceed..... lbs.		
Minimum equipment required.....		
.....		
.....		

ENGINES.

	Engine No. 1.	Engine No. 2.	Engine No. 3.	Engine No. 4.
Name of Type.....				
Pusher or Tractor.....				
Right or left hand.....				
H.P.....				
No. of Cylinders.....				
Bore.....				
Stroke.....				

Owner, or Owners, and Addresses.....
.....
.....

Dated this..... day of..... 19.....

For The Air Board.

Superintendent Certificate Branch.

*See I.C., Arts. 5-10, Annex A, Annex D, 46.

A.B. 13.

APPLICATION FOR LICENSE FOR AIRHARBOUR.**THE MARKING OF AIRHARBOURS.***

The following directions have been given by the Air Board with regard to the marking of air harbours.

1. The marks at air harbours shall consist of lights and of ground marks formed by lines contrasting with the surface upon which they appear, and having a width of at least three feet. The marks shall not form an obstruction.

2. The ground mark at every public aerodrome or seaplane station (that is an aerodrome or seaplane station available for use by the public) shall be as follows:—

(a) If the aerodrome or seaplane station is licensed for use both by day and night, a circle at least twenty-five feet in diameter inside.

(b) If the aerodrome or seaplane station is licensed for use by day only a square of which each side is twenty-five feet in length inside.

3. The ground mark at every commercial aerodrome or seaplane station (that is an aerodrome or seaplane station licensed for use only by flying machines belonging to specified companies, firms or individuals) shall be an equilateral triangle each side of which is at least twenty-five feet in length inside.

4. In addition to the ground marks specified in the preceding paragraphs the ground mark at every aerodrome shall indicate the size of a circular area adapted for the alighting and taking-off of aeroplanes which has in its vicinity no object of such a height that a line drawn from its top to the nearest point of the circumference of the circular area makes an angle at that circumference of more than $7\frac{1}{2}$ degrees from the horizontal. Such indication shall be as follows:—

(a) If the diameter of the circular area is three hundred yards or under, two lines forming a cross, and dividing the area enclosed within the circular, square or triangular mark into four approximately equal parts.

(b) If the diameter of the circular area is over three hundred and less than four hundred yards, two parallel lines dividing the enclosed area into three parts, each of equal width in the middle.

(c) If the diameter of the circular area is more than four hundred and less than six hundred yards, one line dividing the enclosed area into two equal parts. In the case of a triangular mark, the line shall bisect one of the angles.

(d) If the diameter of the circular area is more than six hundred yards and less than eight hundred, a circular dot three feet in diameter in the centre of the enclosed area.

(e) If the diameter of the circular area is more than eight hundred yards, no lines in the enclosed area.

5. The size of the circular area described in the last preceding paragraph shall not be reduced by the existence in its vicinity of an object of such a height that a line drawn from its top to the nearest point of the circumference of the circular area, makes an angle at that circumference of more than seven and a half degrees if, in the opinion of the examining officer, such object does not constitute a danger to flying and it is marked by day with a letter "D" at least eight by ten feet in size formed by lines at least two feet in width.

6. At every customs aerodrome or seaplane station the circle, square or triangle shall have enclosed within it a circular mark forming a circle at least nine feet in diameter inside.

7. The ground mark at every airship harbour shall be a figure consisting of four lines at least twenty-five feet in length crossing one another at a common centre and at equal angles each from its neighbours.

8. At a customs airship harbour the lines shall not intersect one another but shall be interrupted at a radius of four and one-half feet from the point at which the middle of the lines would intersect.

9. The ground marks at airship harbours and aerodromes shall be placed in the centre of the area available for the alighting and taking off of aircraft. At seaplane stations they shall be placed on a building or other available area.

10. Ground marks shall be covered up during any season at which the air harbour is not licensed, or is not fit, for use.

11. An area at which no supplies of fuel are maintained but which is available for use as an emergency alighting ground, may be authorized to be marked by a Greek cross formed by two lines at least twenty-five feet long.

12. At every airharbour licensed for use at night the ground marks and any "D" marks shall be outlined by lights or illuminated and any object marked by a "D" mark shall carry a red light at each end and at the highest point.

13. At seaplane stations the alighting "T" or streamer shall be illuminated at night.

14. At aerodromes licensed for use at night the alighting, taking off and neutral zones will at night be lighted as follows:—

*Compare I.C., Annex F, II.

- (a) The taking off zone will be marked by white lights placed in the position of an "L", and the alighting zone will be similarly marked. The "L's" shall be back to back, that is to say that the long sides of the "L's" will indicate the borders of the neutral zone. The direction of landing shall invariably be along the long arm of the "L" and toward the short arm. The lights of the "L's" should be so placed that the lights indicating the top extremity of the long arm shall be the nearest point on the aerodrome upon which a flying machine can safely touch ground. The lights indicating the short arm of the "L" should indicate the limit of safe landing ground for flying machines, that is, that the flying machine should not overrun the short arm, or
- (b) Where it is desired to save lights and personnel, two lights shall be placed on the windward side of the aerodrome to mark the limits of the neutral zone, the line joining the lights being at right angles to the direction of the wind. Two more lights shall be placed as follows: one on the leeward side of the aerodrome on the line drawn parallel to the direction of the wind and passing midway between the two lights on the windward side, for showing the extent of the aerodrome and the direction of the wind, and the other shall be placed midway between the two lights marking the limits of the neutral zone. Additional lights may be placed symmetrically along the boundary lines of the neutral zone and on the ends of the taking-off and landing zones, on the line through the three lights on the windward side.

DESIRABLE CHARACTERISTICS OF AERODROMES AND SEAPLANE STATIONS.

1. **LOCATION.** An aerodrome or seaplane station to serve a given urban area should be within the shortest possible distance from the centre of the area to be served, and the means of communication with that centre should be the best the circumstances permit. There is no advantage in making a very rapid journey by air if time is wasted going to or from the airharbour of departure or arrival. Urban municipalities situated upon the water should, where possible, be served by a combined aerodrome and seaplane station, thus reducing the expense for both equipment and maintenance.

2. **EXPOSURE.** An aerodrome or seaplane station should not be so located that it is exposed to abnormally irregular or violent winds or squalls or, in the case of a seaplane station, to seas or heavy swell.

3. **SIZE OF AERODROMES.** At a public aerodrome, the circular area available for the taking-off and alighting of flying machines should not be less than four hundred yards in diameter. The largest machines even of to-day require a run of 800 yards. There should be no objects in the vicinity which require to be marked as dangerous, and ordinarily no license will be granted to any public aerodrome which has in its vicinity more than two of such objects. The effect of the direction with regard to the angle at the circumference of the circular alighting and taking-off area is that a fence 4' 6" high, must be at least 34' 6" away from the nearest point of that circumference, a hangar twenty-five feet high, at least 191' 6" away from it, and a tree or building sixty feet high, at least 460' away from it. In other words the horizontal distance must be slightly more than 7' 6" for each foot of height.

4. **SHAPE OF SURFACE OF AERODROMES.** The ground surface should be smooth both within the circular area and in any area lying between it and the hangars or any other point to or from which flying machines may require to taxi or on which they might alight. The surface should also, within narrow limits, be level. The ideal aerodrome would have a gradient of about one-half of one per cent from the circumference of the circle inwards to the centre in every direction, but such a condition can rarely be obtained. No gradient should, however, exceed two per cent. Changes in grade should be infrequent, and transitions from gradient to gradient should in all cases be very easy.

5. **QUALITY OF SURFACE OF AERODROMES.** The quality of the surface should be such that it is sufficiently firm to support the weight of a flying machine on its landing wheels without undue displacement in any weather and in any season except winter when skids would be used. At the same time it should not be such as to pulverize easily, since wind-borne dust is likely to injure engines. Hard grazing land is consequently to be preferred, and a sub-soil of a porous character, the whole drying readily after rain.

6. **SIZE OF SEAPLANE STATIONS.** There should be at least a mile square of water suitable for alighting and taking off, and not flanked on any side by high buildings, trees or cliffs. The depth of water throughout should be not less than eight feet.

7. **HANGARS, ETC.** There should be hangar accommodation for the traffic immediately in prospect, and ample space for the extension of this accommodation. At seaplane stations there should be a landing stage so constructed as to permit of the ready handling of planes at any stage of water. Repair shops, etc., should be located according to circumstances. The main store of petrol should be at such points as will permit of supplies being readily unloaded into it, and pipes should lead to small reservoirs from which the petrol can be conveniently delivered direct to the machines. Municipalities may find it advantageous to confine themselves to the purchase and preparation of the ground and to grant concessions to private firms for the storage, refueling and repair of machines.

8. **EQUIPMENT.** Every public aerodrome and seaplane station should have telephone connection with the urban centre which it serves. It should also, if possible, have connection with a water and sewerage system and be supplied with electric power or gas, or both. An adequate first-aid medical equipment should also be provided.

CANADA AIR REGULATIONS, 1920.

APPLICATION FOR A LICENSE FOR AN AIRHARBOUR.

(To be sent in in duplicate).

Owner.....
(In BLOCK CAPITALS)

Owner's address.....

The Secretary,
The Air Board,
Ottawa, Ontario.

1. Application is hereby made for a license to an airharbour of which the proper description is as follows:—(Conveyancing description to be given of land area and water area privately owned, if any).

2. There is enclosed herewith a plan on a scale of at least 20" to the mile showing the proposed airharbour and the surrounding ground or water to a distance of 550 yards in all directions. The plan shows the land contours of the proposed airharbour at vertical intervals of 2 feet and of the surrounding ground area at intervals of 20 feet. It also accurately shows all natural features, buildings, trees, or works on the proposed air harbour and those on the surrounding ground upwards of 10 feet in height, the heights being as noted upon the plan. The proposed circular area for the alighting and taking off of machines is also shown and any dangerous objects in the vicinity are specially marked.

3. The applicant's title to the land area or water area privately owned is:—

4. The airharbour is for use as an airdrome, a seaplane station, an airship harbour, or a balloon harbour.

5. The airharbour is to be available for use only by day, or by day and by night.

6. The airharbour is to be available for use by the public, or only by aircraft belonging to the following owners:—

7. The character of the ground surface and of the subsoil is as follows (if the application refers to an aerodrome):—

8. The following equipment is or is to be installed at the airharbour:—

9. The distance to the nearest railway station is..... in a..... direction, and to the nearest tramway station..... in a..... direction.

10. The following utilities are available:—

Water from..... mains.

Gas from..... "

Electric light or power from..... wires.

Telephone connection with..... exchange.

11. Application is made for authority to make the following charges (only at a public air harbour):—

Alighting and taking off.	Small Machines.	Medium Machines.	Large Machines.
Alighting and taking off—			
(a) By day.....			
(b) By night.....			
Open air storage—			
(a) Above 2 hours up to 8 hours.....			
(b) Above 8 hours for each 24 hours, including the first 8 hours.....			
(c) Per month.....			
Hangar storage per 100 sq. ft. or fraction thereof (to be ascertained by multiplying the greatest breadth by the overall length):			
(a) Unheated, per day.....			
(b) " " per month.....			
(c) Heated (October to March inclusive), per day.....			
(d) " " " " per month.....			

The alighting charge to include the starting of propellers, one test flight and the supply of all available information as to routes and weather conditions, but tying down and repairs to be separately charged for.

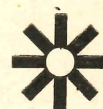
12. There is enclosed a remittance of \$10.00 in payment of the fee for the license. The particulars above given are true.

Dated at this day of 19

Signature.....

DIAGRAMS SHOWING THE MARKING OF AIR HARBOURS

1. Emergency Landing Grounds.
2. Airship Harbours.
3. Customs Airship Harbours.



4. Aerodromes and Seaplane Stations.

	AERODROMES ONLY				Aerodromes over 800 yards and all Seaplane Stations
	Under 300 yards.	300 to 400 yards.	400 to 600 yards.	600 to 800 yards.	
(a) Public Air Harbours open by day and night.					
(b) Public Air Harbours open by day only.					
(c) Public customs Air Harbours open by day and night.					
(d) Public customs Air Harbours open by day only.					
(e) Commercial Air Harbours.					
(f) Commercial Customs Air Harbours.					

A.B. 14.

No.....

Folio No.....

CANADA AIR REGULATIONS, 1920.

LICENSE FOR AIRHARBOUR.

This certifies that.....
whose address is.....
is hereby granted a license under the Air Regulations, 1920, and under the conditions specified overleaf.....
for the use as a.....
by.....
of the area described as follows:—
during the months of..... inclusive.

The airharbour will be marked thus:

The following objects are to be marked with a "D":

This certificate is subject to the Air Regulations, 1920, and is valid while the conditions specified are complied with.

Dated this day of 19
For the Air Board.
Supt. of Certificate Branch.

CONDITIONS.

I. Having regard to the use specified in the license, the airharbour is to be kept marked and lighted as required under the directions printed below and any other directions that may be given by the Air Board from time to time.

II. If hereafter any object comes into existence or increases in size so as to diminish the size of the circular area for the alighting and taking off of aircraft as defined in the Directions, this license shall become void unless the object is certified as not being dangerous to flying and is marked as prescribed. The owner of the airharbour shall give notice forthwith of the coming into existence or increase in size of any such object to the Secretary of the Air Board, Ottawa.

III. At least one person must be kept in attendance during the whole time a public airharbour is licensed for use.

IV. At every public airharbour a reasonable supply of fuel and oil must be maintained and be available at the usual prices for the supply of aircraft.

V. Attention is particularly drawn to Parts III and VIII of the Air Regulations, 1920.

[Note: Here will follow the directions in form 13.]

A.B. 15.

CANADA AIR REGULATIONS, 1920.

APPLICATION FOR PRIVATE AIR PILOT'S CERTIFICATE (FLYING MACHINES).*

(To be sent in in duplicate).

Name of Applicant.....
(In BLOCK CAPITALS).
Permanent Address.....
Nationality.....
Date of Birth.....

*See I.C., Art. 12, Annex E.

The Secretary,
The Air Board,
Ottawa, Ont.

I ask for a certificate authorizing me to act as a private pilot for flying machines, on which my experience has been as follows:—

Type.	Hours Flown.	Civil or Military.	Area or Route.	Year.
.....
.....
.....
.....
.....
.....
.....

(If space is insufficient, give information on separate sheet).

*I am a qualified Military Pilot, having become so while serving with the:

*I am not a qualified military pilot, but am ready upon notice to undergo the practical tests and examinations required, arrangements having been made for carrying out the practical tests at..... on a..... machine.

I hereby declare that the above particulars are true in every respect.

I enclose a fee of two dollars, (\$2.00) and two unmounted photographs of myself, (not larger than 2" x 3").

Signature of Applicant.....
Date of Application.....

*Strike out paragraph inapplicable.

CONDITIONS OF ISSUE OF PRIVATE PILOT'S CERTIFICATE.

1. A Private Pilots Certificate does not authorize the holder to fly for hire, or for any reward except a prize in a contest under the auspices of a recognized aeronautical association.
2. A certificate will be issued only after flying tests and examinations as set out below, except that qualified military pilots are exempt from both test and examinations.
3. No private pilot shall take up a passenger unless he has completed at least 10 hours solo flying, and shall not take up a passenger in any machine unless he has flown a machine of that type for at least two hours, and has flown a machine, within six months, for at least one hour, either alone or accompanied only by an Instructor.
4. Certificates remain valid only if the holder passes a satisfactory medical examination at least every twelve months and after any serious accident or illness, and may be cancelled at any time for cause.
5. Flying tests for private pilot's certificates will be as follows, the candidate being alone in the flying machine:—

(i) Tests for taking off and alighting.

- (a) A flight during which the pilot shall attain a minimum altitude of 5,000 feet above the sea-level. The descent shall finish with a glide, the engine shut off at 5,000 feet above the sea-level. The alighting shall be made without restarting the engine, and the machine shall be brought to rest within 300 feet of a point fixed beforehand by the examining officer of the test.
- (b) Four flights in each of which the pilot shall ascend to at least 1,500 feet above the ground or water and shall, after shutting off his engine at that height and without restarting it, land and bring his machine to rest within 150 feet of a mark selected before taking off.

(ii) Tests of skill.

- On one of the four flights last mentioned, the pilot shall fly at an altitude of not less than 1,500 feet above the ground or water around two marks situated at least 550 yards apart, making, to the satisfaction of the Examining Officer, a series of five figure of eight turns, each turn reaching one of the marks.
6. The conditions of the five specified flights must be exactly complied with in a total of no more than seven attempts. If available a barograph shall be carried, and the graph, signed by the examiners, will be attached to their report which will cover all incidents, especially the alightings.
 7. The examination will be upon the provisions of the Air Regulations, 1920, especially Parts V, VI, VII and VIII, relating to lights, signals, rules of the air, and traffic in the vicinity of licensed aerodromes and seaplane stations.

The medical examination will be made by a medical officer selected by the Air Board, and will be based upon the following requirements of mental and physical fitness:—

- (a) General considerations. Good family and personal history, with particular reference to nervous stability. Absence of any mental, moral or physical defect which will interfere with flying efficiency.
- (b) General surgical examination. The aeronaut must neither suffer from any wound, injury or operation nor possess any abnormality, congenital or otherwise, which will interfere with the efficient and safe handling of aircraft.
- (c) General medical examination. The aeronaut must not suffer from any disease or disability which renders him liable suddenly to become incompetent in the management of aircraft. He must possess heart, lungs, kidneys and nervous system capable of withstanding the effects of altitude and also the effects of prolonged flight.
- (d) Eye examination. The aeronaut must possess a degree of visual acuity compatible with the efficient performance of his duties. No pilot or navigator shall have more than two (2) dioptries of latent hypermetropia: muscle balance must be good and commensurate with the refraction. He must have a good field of vision in each eye and must possess normal colour perception.
- (e) Ear examination. The middle ear must be healthy. The aeronaut must possess a degree of auditory acuity compatible with the efficient performance of his duties. The vestibular mechanism must be intact and neither unduly hypersensitive or hyposensitive.
- (f) Nose and throat examination. The aeronaut must possess free nasal air entry on either side and not suffer from serious acute or chronic affections of the upper respiratory tract.

A.B. 16.

CANADA

AIR REGULATIONS, 1920.

No.

File No.

PRIVATE AIR PILOT'S CERTIFICATE (FLYING MACHINES).*

This certifies that
whose address is.....

..... and whose photograph is attached is authorized by the Air Board to act as unpaid pilot of flying machines not used for commercial or state purposes.

This certificate is subject to the conditions printed below and to cancellation at any time for cause.

Dated this..... day of..... 19
For the Air Board.

.....
Superintendent Certificate Branch.

CONDITIONS.

1. The holder of this certificate shall not take up a passenger in any machine unless he has completed at least ten hours solo flying. He shall not take up a passenger in any machine unless he has, either alone or accompanied only by an instructor, flown a machine of that type for at least two hours and has flown a machine within six months for at least one hour.

2. The holder must pass a satisfactory medical examination and be certified as fit to fly within twelve months from the date of this certificate and within every twelve months thereafter. He must also before flying after any serious accident or illness pass a like examination and obtain a like certificate. The examination is to be made by a medical officer approved by the Air Board and the result endorsed hereon.

Signature.....

*See I.C., Art. 12, Annex E.

A.B. 17.

CANADA AIR REGULATIONS, 1920.

APPLICATION FOR COMMERCIAL AIR PILOT'S CERTIFICATE FOR FLYING MACHINES.*

(To be sent in in duplicate).

See conditions printed on back of this form.

Name in full.....
(In BLOCK CAPITALS).

Permanent address.....

*See I.C., Art. 12, Annex E.

The Secretary,
The Air Board,
Ottawa.

1. I am a British Subject, aged....., and ask for a Commercial Pilot's Certificate for Light—Medium—Heavy* flying machines. My experience has been as follows:—

Type.	Hours Flown.	Civil or Military.	Area or Route.	Year.
.....
.....
.....
.....
.....
.....
.....
.....
.....

(If space insufficient, give information on separate sheet).

2. I am ready upon notice to undergo the practical tests prescribed and to pass the prescribed technical and medical examinations. Arrangements have been made for carrying out the prescribed tests at..... on a..... machine.

3. I enclose two unmounted photographs of myself (not larger than 3" x 2").

4. I understand that upon the issue to me of the certificate asked for, I become a member of the Canadian Air Force and liable to perform such military training and other duty as may be prescribed.

Signature of Applicant.....

Date of Application.....

CONDITIONS OF ISSUE OF COMMERCIAL AIR PILOT'S CERTIFICATE FOR FLYING MACHINES.

1. Commercial pilot's certificates for flying machines will not be granted to persons under 19 years of age.

2. Certificates will be issued only after flying tests and technical and medical tests and examinations as set out below.

3. Commercial Pilot's Certificate will be issued in respect of three classes of machines:

(a) **Light Machines**, i.e., Machines having a maximum safe load, (including fuel and oil) of 1,000 pounds or less.

(b) **Medium Machines**, i.e., Machines having a maximum safe load, (including fuel and oil) of more than 1,000 and less than 3,000 pounds.

(c) **Heavy Machines**, i.e., Machines having a maximum safe load, (including fuel and oil) of 3,000 pounds or more.

4. A certificate issued only in respect of one of these classes of machines is limited to machines included in that class but will entitle the holder to fly any machine belonging to the class subject to the conditions

(a) that he may not take charge of a machine of any given type until after he has flown a machine of that type for two hours either under instruction or alone in the machine and

(b) That he may not take charge of any machine unless he has flown a machine within six months for at least one hour either alone or under instruction.

*Strike out inapplicable words.

5. Certificates are subject to the holder passing a satisfactory medical examination at least every six months and after any serious accident or illness and may be cancelled at any time for cause.

6. Flying tests for commercial pilot's certificates will be as follows:

(i) **Tests for taking off and alighting.**

- (a) A flight, to the satisfaction of the examining officer, during which the pilot shall attain a minimum altitude of 5,000 feet above sea-level and finish with a glide, the engine being shut off at that height, the alighting made without restarting the engine, and the machine brought to rest within 300 feet of a point fixed beforehand by the examining officer of the test.
- (b) Four similar flights in each of which the pilot shall ascend to at least 1,500 feet above the ground or water and shall alight within 150 feet of a mark selected before taking off.

(ii) **Tests of Skill.**

On one of the four flights last mentioned, the pilot shall fly at an altitude of not less than 1,500 feet above the ground or water around two marks situated at least 550 yards apart, making, to the satisfaction of the examining officer, a series of five figure of eight turns, each turn reaching one of the marks.

(iii) **Test of Endurance.**

A cross country or oversea flight of at least 175 miles beginning and ending at the same point. The candidate shall be informed of his course and furnished with the appropriate map. The judges will decide whether the flight has been satisfactorily made.

(iv) **Night Flight.**

A thirty minute flight made between two hours after sunset and two hours before sunrise, at a height of at least 1,500 feet above the ground or water, to the satisfaction of the examining officer.

7. All flights except three of the alighting tests from 1,500 feet shall be carried out with the pilot alone in the machine. The excepted flights shall be carried out with the pilot alone in the machine in the case of a test for a certificate for small machines, but tests for certificates for medium or large machines shall be carried out in a machine belonging to the medium or large class with the necessary crew, if any.

8. If available a barograph shall be carried on all flights and the graph, signed by the examiners, shall be attached to their report which will cover all incidents especially the alightings.

9. Practical tests for a private air pilot's certificate or for a commercial air pilot's certificate for any class of machine will be accepted pro tanto for any commercial air pilot's certificate.

10. The technical examination will be upon the subjects and will include the practical tests indicated:—

- (a) Theoretical knowledge of the resistance of the air as concerns its effect on wings and tail planes, rudders, elevators, and propellers: functions of the different parts of the machine and of their controls.
 - (b) Assembling of flying machines and their different parts.
 - (c) Practical tests on rigging.
 - (d) General knowledge of internal combustion engines, including functions of the various parts: a general knowledge of the construction, assembling, adjustment, and characteristics of aero-engines.
 - (e) Causes of the faulty running of engines and of breakdown.
 - (f) Practical tests in running repairs.
 - (g) Knowledge of rules as to lights and signals and rule of the air, and rules for air traffic on and in the vicinity of aerodromes and seaplane stations.
 - (h) Practical knowledge of the special conditions of air traffic and of international air legislation.
 - (i) Map reading, orientation, location of position, elementary meteorology.
11. The medical examination will be made by a medical officer selected by the Air Board, and will be based upon the following requirements of mental and physical fitness:—
- (a) General considerations. Good family and personal history, with particular reference to nervous stability. Absence of any mental, moral or physical defect which will interfere with flying efficiency.
 - (b) General surgical examination. The aeronaut must neither suffer from any wound, injury or operation nor possess any abnormality, congenital or otherwise, which will interfere with the efficient and safe handling of aircraft.
 - (c) General medical examination. The aeronaut must not suffer from any disease or disability which renders him liable suddenly to become incompetent in the management of aircraft. He must possess heart, lungs, kidneys and nervous system capable of withstanding the effects of altitude and also the effects of prolonged flight.
 - (d) Eye examination. The aeronaut must possess a degree of visual acuity compatible with the efficient performance of his duties. No pilot or navigator shall have more than two (2) dioptres of latent hypermetropia: muscle balance must be good and commensurate with the refraction. He must have a good field of vision in each eye and must possess normal colour perception.

- (e) Ear examination. The middle ear must be healthy. The aeronaut must possess a degree of auditory acuity compatible with the efficient performance of his duties. The vestibular mechanism must be intact and neither unduly hypersensitive or hyposensitive.
- (f) Nose and throat examination. The aeronaut must possess free nasal air entry on either side and not suffer from serious acute or chronic affections of the upper respiratory tract.

A.B. 18.

CANADA

AIR REGULATIONS, 1920.

No.....

No.....

File No.....

COMMERCIAL AIR PILOT'S CERTIFICATE (FLYING MACHINE).*

This certifies that.....
 whose address is.....

and whose photograph is attached is authorized by the Air Board to act as pilot (paid or unpaid) of flying machines when used either for private, state, passenger, freight, or commercial purposes.

This certificate is subject to the conditions printed below and to cancellation at any time for cause.

Dated this.....day of.....19.
 For the Air Board

.....
 Superintendent Certificate Branch.

CONDITIONS.

1. This certificate extends only to the class or classes of flying machines specified in the body hereof. Flying machines are divided into the following classes:—

(a) **Light Machines**, i.e., Machines having a maximum safe load, including fuel and oil, of 1,000 pounds or less.

(b) **Medium Machines**, i.e., Machines having a maximum safe load including fuel and oil, of more than 1,000 and less than 3,000 pounds.

(c) **Heavy Machines**, i.e., Machines having a maximum safe load including fuel and oil, of 3,000 pounds or more.

Signature.....

2. The holder of this certificate shall not take charge of any machine unless after he has flown a machine of that type for two hours and has flown a machine within six months for at least one hour.

3. This certificate is subject to the holder passing a satisfactory medical examination and being certified as fit to fly at least every six months. The holder shall also, before flying after any serious accident or illness pass a like examination and obtain a like certificate. Examinations are to be made by a medical officer approved by the Air Board and the result thereof endorsed hereon.

4. The holder of this certificate is a member of the Canadian Air Force and is liable to perform such military training or other duty as may be prescribed.

*See I.C., Art. 12, Annex E, I, B.

A.B. 19.

CANADA AIR REGULATIONS, 1920.

APPLICATION FOR CERTIFICATE AS AIRSHIP OFFICER PILOT.*

(To be sent in in duplicate).

See conditions on other side.

The Secretary,
The Air Board,
Ottawa, Ontario.

1. I am a British Subject aged.....and ask for an Airship Officer Pilot's Certificate, Class.....

2. *I have obtained the military qualification
*I have fulfilled the flying conditions } prescribed for the certificate and
attach the written evidence necessary on this point. }

3. I am ready upon notice to undergo the practical tests prescribed and to pass the prescribed technical and medical examinations. Arrangements have been made for carrying out the prescribed tests at.....on a.....airship.

4. I enclose two unmounted photographs of myself, (not larger than 3" x 2").

5. I understand that upon the issue to me of the certificate asked for I become a member of the Canadian Air Force and liable to perform such military training and other duty as may be prescribed.

Dated at.....this.....day of.....19....

Signature of applicant.....

Date of application.....

CONDITIONS OF ISSUE OF CERTIFICATES TO AIRSHIP OFFICER PILOTS.

1. Certificates to Airship Officer Pilots will not be granted to persons under 19 years of age.

2. Certificates will be issued only after flying tests and technical and medical tests and examinations as set out below.

3. Airship Officer Pilots' Certificates will be issued in three classes as follows:—

(a) First Class Certificates, the holders of which are qualified to command any airship.

(b) Second Class Certificates, the holders of which are qualified to command only airships of less than 710,000 cubic feet capacity.

(c) Third Class Certificates, the holders of which are qualified to command only airships of less than 212,000 cubic feet capacity.

4. An Airship Officer Pilot having a military or naval qualification as such will be granted Class III Certificate without examination and will be granted a Class I certificate if, in his military or naval capacity, he has commanded an airship of over 212,000 cubic feet capacity. In other cases certificates will be granted on the conditions specified in the succeeding paragraphs.

5. Every Airship Officer Pilot must have qualified as the pilot of a free balloon that is must have given evidence of an elementary knowledge of aerostatics and meteorology, and have made six ascents by day, three under instruction, one in control under supervision and one alone in the balloon and, by night, one alone in the balloon. Each of the ascents must have been of at least two hours duration.

6. To obtain a third class certificate the candidate must pass an examination on the subjects specified below and must have made the following flights:—

(i) Twenty certified flights in an airship (three of which shall have been at night) each flight having been of at least one hour's duration. In at least four of these flights the candidate must have handled the airship himself, under the supervision of the commanding officer of the airship, including taking off and alighting.

(ii) One cross-country flight on a predetermined course of at least 70 miles, terminating with a night landing, and made with a duly authorized inspector on board.

7. For a second class certificate the candidate must be the holder of a third class certificate, have had at least four months service as a third class officer on an airship and have made at least 10 flights as such on an airship with a capacity of more than 212,000 cubic feet during the whole of each of which (including taking off and alighting) he has handled the airship himself under the supervision of the commanding officer. He must also give evidence of a knowledge of the subjects specified for the third class certificate.

8. For a first class certificate the candidate must be the holder of a second class certificate, have had at least two months active service as second class officer on an airship and have made at least five flights in such an airship with a capacity of more than 710,000

*Strike out inapplicable words.

*See I.C. Art. 12, Annex E, III.

cubic feet during the whole of each of which (including taking off and alighting) he has handled the airship himself under the supervision of the commanding officer. Each flight must have had a duration of at least one hour and five flights a duration of fifteen hours. He must also give evidence of advanced knowledge of the subjects specified for the third class certificate.

9. The technical examination will be upon the following subjects:—

Aerostatics and meteorology: density of gases, laws of Mariotte and of Gay-Lussac; barometric pressure, Archimedes principle: confinement of gases: interpretation and use of meteorological information and of weather charts.

Physical and chemical properties of light gases, and of materials used in the construction of airships.

General theory of airships.

Dynamic properties of moving bodies in air.

Elementary knowledge of internal combustion engines.

Elementary navigation: use of the compass: location of position.

Inflation: stowage: rigging: handling: controls and instruments.

10. Every certificate is subject to the holder passing a satisfactory medical examination and being certified as fit to fly at least every six months. The holder shall also, before flying after any serious accident or illness pass a like examination and obtain a like certificate.

11.—The medical examination will be made by a medical officer selected by the Air Board and will be based upon the following requirements of mental and physical fitness:—

- (a) General considerations. Good family and personal history, with particular reference to nervous stability. Absence of any mental, moral or physical defect which will interfere with flying efficiency.
- (b) General surgical examination. The aeronaut must neither suffer from any wound, injury or operation nor possess any abnormality, congenital or otherwise, which will interfere with the efficient and safe handling of aircraft.
- (c) General medical examination. The aeronaut must not suffer from any disease or disability which renders him liable suddenly to become incompetent in the management of aircraft. He must possess heart, lungs, kidneys and nervous system capable of withstanding the effects of altitude and also the effects of prolonged flight.
- (d) Eye examination. The aeronaut must possess a degree of visual acuity compatible with the efficient performance of his duties. No pilot or navigator shall have more than two (2) dioptres of latent hypometropia: muscle balance must be good and commensurate with the refraction. He must have a good field of vision in each eye and must possess normal colour perception.
- (e) Ear examination. The middle ear must be healthy. The aeronaut must possess a degree of auditory acuity compatible with the efficient performance of his duties. The vestibular mechanism must be intact and neither unduly hypersensitive or hyposensitive.
- (f) Nose and throat examination. The aeronaut must possess free nasal air entry on either side and not suffer from serious acute or chronic affections of the upper respiratory tract.

A.B. 20.

No.....

File No.....

CANADA. AIR REGULATIONS, 1920.

AIRSHIP OFFICER PILOT'S CERTIFICATE.*

This certifies that.....
whose address is.....

and whose photograph is attached is authorized by the Air Board to act as Airship Officer Pilot, Class.....and is qualified to command airships of.....cubic feet capacity and any balloon.

This certificate is subject to the conditions printed below and to cancellation at any time for cause.

Dated this.....day of.....1919.

For The Air Board.

.....
Superintendent Certificate Branch.

CONDITIONS.

1. This certificate extends only to the class or classes of airships specified in the body thereof. Airships are divided into the following classes:—

*See I.C., Art. 12, Annex E, III.

- (a) First Class Certificates, the holders of which are qualified to command any airship.
- (b) Second Class Certificates, the holders of which are qualified to command only airships of less than 710,000 cubic feet capacity.
- (c) Third Class Certificates, the holders of which are qualified to command only airships of less than 212,000 cubic feet capacity.

Signature.....

2. This certificate is subject to the holder passing a satisfactory medical examination and being certified as fit to fly at least every six months. The holder shall also, before flying after any serious accident or illness pass a like examination and obtain a like certificate. The examination must be made by a medical officer approved by the Air Board and the result must be endorsed hereon.

3. The holder of this certificate is a member of the Canadian Air Force and is liable to perform such military training or other duty as may be prescribed.

A.B. 21.

CANADA. AIR REGULATIONS, 1920.

APPLICATION FOR CERTIFICATE AS BALLOON PILOT.*

(To be sent in duplicate).

See conditions on other side.

The Secretary,
The Air Board,
Ottawa, Ontario.

1. I am a subject or citizen of.....aged.....and ask for a Balloon Pilot's certificate.

2. *I have obtained the military qualifications prescribed.

*I have fulfilled the flying conditions

for the certificate and attach the written evidence necessary on this point.

3. I am ready upon notice to undergo the practical tests prescribed and to pass the prescribed technical and medical examinations. Arrangements have been made for carrying out the prescribed tests at.....

4. I enclose two unmounted photographs of myself (not larger than 2" x 3").

Dated this.....day of.....19.....

Signature of Applicant.....

Date of Application.....

CONDITIONS OF ISSUE OF CERTIFICATES TO BALLOON PILOTS.

1. A certificate as a Balloon Pilot will not be granted to any person under 19 years of age.

2. Certificates will be issued only after flying tests and technical and medical tests and examinations as set out below.

3. A Balloon Pilot having a military or naval qualification as such will be granted a Balloon Pilots' certificate without examination.

4. Every balloon pilot must have made the following ascents:—

By day—3 ascents under instruction.

1 ascent in control under supervision.

1 ascent alone in the balloon.

By night—1 ascent alone in the balloon.

Each ascent shall be of at least two hours duration.

5. The technical examination will be upon the following:—

Elementary aerostatics and meteorology: general knowledge of a balloon and its accessories: inflation: rigging: management of an ascent: instruments: precautions against cold and high altitudes: knowledge of Rules as to Lights and Signals and Rules of the Air, Rules for Air Traffic on and in the Vicinity of Aerodromes, and of international air legislation, map reading and orientation.

6. This certificate is subject to the holder passing a satisfactory medical examination and being certified as fit to fly at least every six months. The holder shall also, before flying after any serious accident or illness, pass a like examination and obtain a like certificate.

[*See I.C., Art. 12, Annex E, II.]

*Strike out inapplicable words.

A.B. 22.

No.....

File No.....

CANADA AIR REGULATIONS, 1920.

BALLOON PILOT'S CERTIFICATE.*

This certifies that
whose address is.....

and whose photograph is attached is authorized by The Air Board to act as a Balloon Pilot.
This certificate is subject to the conditions printed below and to cancellation at any time for cause.

Dated this day of 19

.....
Superintendent Certificate Branch.

CONDITIONS.

1. This certificate is subject to the holder passing a satisfactory medical examination and being certified as fit to fly, at least every six months. The holder shall also, before flying after any serious accident or illness pass a like examination and obtain a like certificate. The examination shall be made by a medical officer approved by the Air Board and its result shall be endorsed hereon.

Signature.....

A.B. 23.

CANADA AIR REGULATIONS, 1920.

APPLICATION FOR AIR NAVIGATOR'S CERTIFICATE.*

(See conditions on other side).

Name of applicant.....
(IN BLOCK CAPITALS)

Permanent address.....

Date of birth.....

The Secretary,
The Air Board,
Ottawa, Ont.

I am a British subject and ask that I be granted a Air Navigator's Certificate.

I am ready to submit to the prescribed theoretical and practical examinations, and understand that I shall be a member of the Canadian Air Force and shall be liable to such military training and duty as is prescribed.

I attach two unmounted prints of a photograph of myself (not larger than 2" x 3").

Dated at this day of 19

Signature of Applicant.....

CONDITIONS OF ISSUE OF AIR NAVIGATOR'S CERTIFICATE.

1. Air Navigators' Certificates will not be granted to any person who is under 19 years of age, or is not a British subject.

2. Certificates are subject to the holder passing a satisfactory medical examination at least every six months, and after any serious accident or illness and may be cancelled at any time for cause.

3. Certificates of three classes will be issued only after theoretical and practical examinations of progressive difficulty upon the following subjects:

(a) Practical Astronomy:

True and apparent movements of the celestial bodies. Different aspects of the celestial sphere.

Hour angles, mean, true and astronomical time.

Shape and dimensions of the earth.

Star globes and maps.

Method of determining latitude, longitude, time and azimuth.

(b) Navigation.

Maps and charts—how to read them.

Compass, magnetic meridian, variation, deviation.

*See I.C., Art. 12, Annex E, IV.

- Courses, bearings, and their corrections.
- Compensation of compasses (technical and practical).
- Calculations of azimuth.
- Flight by dead reckoning, measure of the relative speed, drift and traverse table
- Chronometer, chronometer rate, comparisons.
- Sextants, adjustments.
- Nautical almanac.
- Determination of positions by means of bearing and altitude of stars.
- Knowledge of great circle navigation.
- Aeronautical navigational instruments.
- (c) General Knowledge:
 - International rules for air and maritime navigation.
 - International air legislation.
 - Practical knowledge of meteorology and of weather charts.

4. The medical examination will be made by a medical officer selected by the Air Board, and will be based upon the following requirements of mental and physical fitness:—
- (a) General considerations. Good family and personal history, with particular reference to nervous stability. Absence of any mental, moral or physical defect which will interfere with flying efficiency.
 - (b) General surgical examination. The aeronaut must neither suffer from any wound, injury or operation nor possess any abnormality, congenital or otherwise, which will interfere with the efficiency and safe handling of aircraft.
 - (c) General medical examination. The aeronaut must not suffer from any disease or disability which renders him liable suddenly to become incompetent in the management of aircraft. He must possess heart, lungs, kidneys and nervous system capable of withstanding the effects of altitude and also the effects of prolonged flight.
 - (d) Eye examination. The aeronaut must possess a degree of visual acuity compatible with the efficient performance of his duties. No pilot or navigator shall have more than two dioptres of latent hypermetropia: muscle balance must be good and commensurate with the refraction. He must have a good field of vision in each eye and must possess normal colour perception.
 - (e) Ear Examination. The middle ear must be healthy. The aeronaut must possess a degree of auditory acuity compatible with the efficient performance of his duties. The vestibular mechanism must be intact and neither unduly hypersensitive or hyposensitive.
- Nose and throat examination. The aeronaut must possess free nasal entry on either side and not suffer from serious acute or chronic affection of the upper respirator tract.

A.B. 24.

No.....

File No.....

CANADA AIR REGULATIONS, 1920.

AIR NAVIGATOR'S CERTIFICATE.*

This certifies that.....
whose address is.....

and whose photograph is attached, is authorized by The Air Board to act as a Air Navigator.

This certificate is a class certificate. It is subject to the conditions printed below, and to cancellation at any time for cause.

Dated this.....day of.....19

For The Air Board.

Superintendent Certificate Branch.

CONDITIONS.

1. The holder of this certificate is a member of the Canadian Air Force and is liable to perform such military training or other duty as may be prescribed.

2. This certificate is subject to the holder passing a satisfactory medical examination and being certified as fit to fly at least every six months. The holder shall also, before flying after any serious accident or illness pass a like examination and obtain a like certificate. Examinations are to be made by a medical officer approved by the Air Board and the result thereof endorsed hereon.

Signature.....

*See I.C., Art. 12, Annex E, IV.

A.B. 25.

CANADA AIR REGULATIONS, 1920.

APPLICATION FOR AIR ENGINEER'S CERTIFICATE.

(To be sent in in duplicate).

Name of Applicant.....
(in BLOCK CAPITALS).

Permanent Address.....

Date of Birth.....

The Secretary,
The Air Board,
Ottawa, Ont.

I am a British Subject and ask that I be issued a certificate as Air Engineer.
I have the following general mechanical experience.

Shop.	TIME.		Nature of Duties.
	From	To.	
.....
.....
.....
.....
.....
.....
.....
.....
.....

I have the following experience with aircraft engines:

Type.	NUMBER.			DATE.	
	Construct- ion.	Complete Overhaul.	Top Over- haul.	From	To
.....
.....
.....
.....
.....
.....
.....
.....
.....

I have had the following experience with Aircraft (apart from engines) not above specified.....

I attach at least three certificates of competency from:

Name.	Office or Function.
.....
.....
.....
.....

I hereby declare that the above particulars are true in every respect.

I am prepared upon notice to attend at the airharbour at.....
and submit to such tests and examinations as may be set by the examining officer.

Signature of Applicant.....

Date of Application.....

See I. Act C. 12, Annex E. V.

A.B. 26.

CANADA

AIR REGULATIONS, 1920.

No.....

File No.....

AIR ENGINEER'S CERTIFICATE.

This certifies that.....
whose address is.....

and whose photograph is attached, is authorized by the Air Board to act as an Air Engineer.
The holder of this certificate is a member of the Canadian Air Force and is liable
to perform such military training or other duty as may be prescribed.

The certificate is subject to cancellation at any time for cause.

Dated this.....day of.....19.

For the Air Board.

Signature.....

Superintendent Certificate Branch.

See I. C. Act 12, Annex E. V.

CONVENTION

RELATING TO

International Air Navigation.

NOTE:—This Convention was agreed upon, subject to certain reservations, by the representatives of the Allied and Associated Powers serving on the International Commission on Aerial Navigation which was constituted as a Sub-Commission of the Peace Conference. It has not been ratified but it has been signed by a number of states and forms a guide of the highest possible value and utility.

In certain particulars the Air Regulations, 1920, do not exactly follow it, but it has been departed from only when such a departure seemed essential for practical purposes, having regard to the development of air navigation in Canada. In certain cases the extent of the departure appears on the face of the Regulations which relieve aircraft and their personnel in Canada from certain obligations which, pursuant to the Convention, the Air Regulations require them to observe beyond Canada. The principal instances departure, however, are in the forms for use under the Regulations. The qualifications laid down by the Air Board for pilots of flying machines as and the provisions with regard to the marking of aerodromes are somewhat different from those of the Convention. If the Convention is ratified without reservation the necessary alterations will require to be made.

CHAPTER I.

GENERAL PRINCIPLES.

ARTICLE 1.

The High Contracting Parties recognise that every Power has complete and exclusive sovereignty over the air space above its territory. For the purpose of the present Convention the territory of a State shall be understood as including the National territory, both that of the mother country and of the colonies and the territorial waters adjacent thereto.

ARTICLE 2.

Each contracting State undertakes in time of peace to accord freedom of innocent passage above its territory to the aircraft of the other contracting States, provided that the conditions laid down in the present Convention are observed.

Regulations made by a contracting State as to the admission over its territory of the aircraft of the other contracting States shall be applied without distinction of nationality.

ARTICLE 3.

Each contracting State is entitled for military reasons or in the interest of public safety, to prohibit the aircraft of the other contracting States, under the penalties provided by its legislation and subject to no distinction being made in this respect between its private aircraft and those of the other contracting States, from flying over certain areas of its territory.

In that case the locality and the extent of the prohibited areas shall be published and notified beforehand to the other contracting States.

ARTICLE 4.

Every aircraft which finds itself above a prohibited area shall, as soon as aware of the fact, give the signal of distress provided in Paragraph 17 of Annex D and land as soon as possible outside the prohibited area at one of the aerodromes of the State unlawfully flown over.

CHAPTER II.

NATIONALITY OF AIRCRAFT.

ARTICLE 5.

No contracting State shall, except by a special and temporary authorisation, permit the flight above its territory of an aircraft which does not possess the nationality of a contracting State.

ARTICLE 6.

Aircraft possess the nationality of the State on the register of which they are entered, in accordance with the provisions of Section I. (c) of Annex A.

ARTICLE 7.

No aircraft shall be entered on the register of one of the contracting States unless it belongs wholly to nationals of such State.

No incorporated company can be registered as the owner of an aircraft unless it possess the nationality of the State in which the aircraft is registered, unless the president or chairman of the company and at least two-thirds of the directors possess the same nationality, and unless the company fulfils all other conditions which may be prescribed by the laws of each State.

ARTICLE 8.

An aircraft cannot be validly registered in more than one State.

ARTICLE 9.

The contracting States shall exchange every month among themselves and transmit to the International Commission for Air Navigation referred to in article 34 copies of registrations and of cancellations of registration which shall have been entered on their official registers during the preceding month.

ARTICLE 10.

All aircraft engaged in international navigation shall bear their nationality and registration marks as well as the name and residence of the owner in accordance with Annex A.

CHAPTER III

CERTIFICATES OF AIRWORTHINESS AND COMPETENCY.

ARTICLE 11.

Every aircraft engaged in international navigation shall in accordance with the conditions laid down in Annex B, be provided with a certificate of airworthiness issued or rendered valid by the State whose nationality it possesses.

ARTICLE 12.

The commanding officer, pilots, engineers and other members of the operating crew of every aircraft shall, in accordance with the conditions laid down in Annex E, be provided with certificates of competency and licences issued or rendered valid by the State whose nationality the aircraft possesses.

ARTICLE 13.

Certificates of airworthiness and of competency and licenses issued or rendered valid by the State whose nationality the aircraft possesses, in accordance with the regulations established by Annex B and Annex E and hereafter by the International Commission for Air Navigation, shall be recognised as valid by the other States.

Each State has the right to refuse to recognise for the purpose of flights within the limits of and above its own territory certificates of competency and licences granted to one of its nationals by another contracting State.

ARTICLE 14.

No wireless apparatus shall be carried without a special licence issued by the State whose nationality the aircraft possesses. Such apparatus shall not be used except by members of the crew provided with a special license for the purpose.

Every aircraft used in public transport and capable of carrying ten or more persons shall be equipped with sending and receiving wireless apparatus when the methods of employing such apparatus shall have been determined by the International Commission for Air Navigation.

This Commission may later extend the obligation of carrying wireless apparatus to all other classes of aircraft in the conditions and according to the methods which it may determine.

CHAPTER IV.

ADMISSION TO AIR NAVIGATION ABOVE
FOREIGN TERRITORY.

ARTICLE 15.

Every aircraft of a contracting State has the right to cross the air space of another State without landing. In this case it shall follow the route fixed by the State over which the flight takes place. However, for reasons of general security it will be obliged to land if ordered to do so by means of the signals provided in Annex D.

Every aircraft which passes from one State into another shall, if the regulations of the latter State require it, land

in one of the aerodromes fixed by the latter. Notification of these aerodromes shall be given by the contracting States to the International Commission for Air Navigation and by it transmitted to all the contracting States.

The establishment of international airways shall be subject to the consent of the States flown over.

ARTICLE 16.

Each contracting State shall have the right to establish reservations and restrictions in favour of its national aircraft inconnection with the carriage of persons and goods for hire between two points on its territory.

Such reservations and restrictions shall be immediately published, and shall be communicated to the International Commission for Air Navigation which shall notify them to the other contracting States-

ARTICLE 17.

The aircraft of a contracting State which establishes reservations and restrictions in accordance with Article 16, may be subjected to the same reservations and restrictions in any other contracting State, even though the latter State does not itself impose the reservations and restrictions on other foreign aircraft.

ARTICLE 18.

Every aircraft passing through the territory of a contracting State, including landing and stoppages reasonably necessary for the purpose of such transit, shall be exempt from any seizure on the ground of infringement of patent, design, or model, subject to the deposit of security, the amount of which, in default of amicable agreement, shall be fixed with the least possible delay by the competent authority of the place of seisure.

CHAPTER V.

RULES TO BE OBSERVED ON DEPARTURE, WHEN
UNDER WAY AND ON LANDING.

ARTICLE 19.

Every aircraft engaged in international navigation shall be provided with:

(a) a certificate of registration in accordance with Annex A.

(b) a certificate of airworthiness in accordance with Annex B.

(c) certificates and licenses of the commanding officer, pilots, and crew in accordance with Annex E.

(d) If it carries passengers, a list of their names.

(e) If it carries freight, bills of lading and manifest.

(f) log books in accordance with Annex C.

(g) If equipped with wireless, the special license prescribed by Article 14.

ARTICLE 20.

The log books shall be kept for two years after the last entry.

ARTICLE 21.

Upon the departure or landing of an aircraft, the authorities of the country shall have, in all cases, the right to visit the aircraft and to verify all the documents with which it must be provided.

ARTICLE 22.

Aircraft of the contracting States shall be entitled to the same measures of assistance for landing, particularly in case of distress, as national aircraft.

ARTICLE 23.

With regard to the salvage of aircraft wrecked at sea, the principles of Maritime law will apply in the absence of any agreement to the Company.

ARTICLE 24.

Every aerodrome in a contracting State, which upon payment of charges is open to public use by its national aircraft, shall likewise be open to the aircraft of all the other contracting States.

In every such aerodrome there shall be a single tariff of charges for landing and length of stay applicable alike to national and foreign aircraft.

ARTICLE 25.

Each contracting State undertakes to adopt measures to ensure that every aircraft flying above the limits of its territory, and that every aircraft wherever it may be, carrying its nationality mark shall comply with the regulations contained in Annex D. Each of the contracting States undertakes to ensure the prosecution and punishment of all persons contravening these regulations.

CHAPTER VI.

PROHIBITED TRANSPORT.

ARTICLE 26.

The carriage by aircraft of explosives and of arms and munitions of war is forbidden in international navigation. No foreign aircraft shall be permitted to carry such articles between any two points in the same contracting State.

ARTICLE 27.

Each State may in aerial navigation prohibit or regulate the carriage or use of photographic apparatus. Any such regulations shall be at once notified to the International Commission for Air Navigation, which shall communicate this information to the other contracting States.

ARTICLE 28.

As a measure of public safety, the carriage of objects other than those mentioned in Articles 26 and 27 may be subjected to restrictions by any contracting State. Any such regulations shall be at once notified to the International Commission for Air Navigation, which shall communicate this information to the other contracting States.

ARTICLE 29.

All restrictions mentioned in Article 28 shall be applied equally to national and foreign aircraft.

CHAPTER VII.

STATE AIRCRAFT.

ARTICLE 30.

The following are deemed to be State aircraft:—

- (a) Military aircraft.
- (b) Aircraft exclusively employed in State service, such as posts, customs, police.

Every other aircraft shall be deemed to be a private aircraft. All State aircraft other than military, customs, and police aircraft, shall be treated as private aircraft, and such as shall be subject to all the provisions of the present Convention.

ARTICLE 31.

Every aircraft commanded by a person in military service detailed for the purpose is deemed to be a military aircraft.

ARTICLE 32.

No military aircraft of a contracting State shall fly over the territory of another contracting State nor land thereon without special authorization.

In case of such authorization the military aircraft shall enjoy, in principle, in the absence of special stipulation the privileges which are customarily accorded to foreign ships of war.

A military aircraft which is forced to land or which is requested or summoned to land, shall, by reason thereof, acquire no right to the privileges referred to in the above paragraph.

ARTICLE 33.

Special arrangements between the States concerned will determine in what cases police and customs aircraft may be authorized to cross the frontier. They shall in no case be entitled to the privileges referred to in Article 32.

CHAPTER VIII.

INTERNATIONAL COMMISSION FOR AIR
NAVIGATION

ARTICLE 34.

There shall be instituted, under the name of the International Commission for Air Navigation, a permanent Commission placed under the direction of the League of Nations and composed of:

Two representatives of each of the following States :
The United States of America, France, Italy, and Japan;

One representative of Great Britain and one of each of the British Dominions and of India:

One representative of each of the other contracting States.

Each of the five States first-named (Great Britain, the British Dominions and India counting for this purpose as one State) shall have the least whole number of votes which, when multiplied by five, will give a product exceeding by at least one vote the total number of the votes of all the other contracting States.

All the States other than the five first-named shall each have one vote.

The International Commission for Air Navigation shall determine the rules of its own procedure and the place of its permanent seat, but it shall be free to meet in such places as it may deem convenient. Its first meeting shall take place at Paris. This meeting shall be convened by the French Government, as soon as a majority of the signatory States shall have notified to it their ratification of the present Convention.

The duties of this Commission shall be:—

(a) To receive proposals from or to make proposals to any of the contracting States for the modification or amendment of the provisions of the present Convention and to notify changes adopted.

(b) To carry out the duties imposed upon it by the present Article and by Articles 9, 13, 14, 15, 17, 27, 28, 36 and 37 of the present Convention.

(c) To amend the provisions of the Annexes A-G.

(d) To collect and communicate to the contracting States information of every kind concerning international air navigation.

(e) To collect and communicate to the contracting States all information relating to wireless telegraphy, meteorology, and medical science which may be of interest to air navigation.

(f) To ensure the publication of maps for air navigation in accordance with the provisions of Annex F.

(g) To give its opinion on questions which the States may submit for examination.

Any modification of the provisions of any one of the Annexes may be made by the International Commission for Air Navigation when such modification shall have been approved by three-fourths of the total possible vote which could be cast if all the States were represented, and shall become effective from the time when it shall have been notified by the International Commission for Air Navigation to all the contracting States.

Any proposed modification of the articles of the present Convention shall be examined by the International Commission for Air Navigation, whether it originates with one of the contracting States or with the Commission itself. No such modification shall be proposed for adoption by the contracting States, unless it shall have been approved by at least two-thirds of all the possible votes.

All such modifications of the articles of the Convention but (not of the provisions of the Annexes) must be formally adopted by the contracting States before they become effective.

The expenses of organization and operation of the International Commission for Air Navigation shall be borne by the contracting States in proportion to the number of votes at their disposal.

The expenses occasioned by the sending of technical delegations will be borne by their respective States.

CHAPTER IX.

FINAL PROVISIONS.

ARTICLE 35.

The High Contracting Parties undertake, as far as they are respectively concerned, to co-operate as far as possible in international measures concerning:

(a) The collection and dissemination of statistical, current, and special meteorological information, in accordance with the provisions of Annex G.

(b) The publication of standard aeronautical maps, and the establishment of a uniform system of ground marks for flying, in accordance with the provisions of Annex F.

(c) The use of wireless telegraphy in air navigation, the establishment of the necessary wireless stations, and the observation of international wireless regulations.

ARTICLE 36.

General provisions relative to customs in connection with international air navigation are the subject of a special agreement contained in Annex H to the present Convention.

Nothing in the present Convention shall be construed as preventing the contracting States from concluding, in conformity with its principles, special protocols as between State and State in respect of customs, police, posts, and other matters of common interest in connection with air navigation. Any such protocols shall be at once notified to the International Commission for Air Navigation which shall communicate this information to the other contracting states.

ARTICLE 37.

In the case of a disagreement of two or more States relating to the interpretation of the present Convention, the question in dispute shall be determined by the Permanent Court of International Justice to be established by the League of Nations and until its establishment by arbitration.

If the parties do not agree on the choice of the arbitrators, they shall proceed as follows —

Each of the parties shall name an arbitrator, and the arbitrators shall meet to name an umpire. If the arbitrators cannot agree, the parties shall each name a third State, and the third State so named shall proceed to designate the umpire, by agreement or by each proposing a name and then determining the choice by lot.

Disagreement relating to the technical regulations annexed to the present Convention shall be settled by the decision of the International Commission for Air Navigation by a majority of votes.

In case the difference involves the question whether the interpretation of the Convention or that of a regulation is concerned final decision shall be made by arbitration as provided in the first paragraph of this Article.

ARTICLE 38.

In case of war, the provisions of the present Convention shall not affect the freedom of action of the contracting States either as belligerents or as neutrals.

ARTICLE 39.

The provisions of the present Convention are completed by the Annexes A-H, which, subject to Article 34 (c), shall have the same effect and shall come into force at the same time as the Convention itself.

ARTICLE 40.

The British Dominions and India shall be deemed to be States for the purposes of the present Convention.

The territories and nationals of Protectorates or of territories administered in the name of the League of Nations shall, for the purposes of the present Convention, be assimilated to the territory and nationals of the Protecting or Mandatory States.

ARTICLE 41.

States which have not taken part in the war of 1914-1919 shall be permitted to adhere to the present Convention.

ARTICLE 42.

A State which took part in the war of 1914-1919, but which is not a signatory of the present Convention, may adhere only if it is a member of the League of Nations or, until January the 1st, 1923, if its adhesion is approved by the Allied and Associated Powers signatories of the Treaty of Peace concluded with the said State. After January 1st, 1923, this adhesion may be admitted if it is agreed to by at least three-fourths of the signatory and adhering states voting under the conditions provided by Article 34 of the present Convention.

Application for adhesions shall be addressed to the Government of the French Republic, which will communicate them to the other contracting Powers. Unless the State applying is admitted *ipso facto* as a member of the League of Nations, the French Government will receive the votes of the said Powers and will announce to them the result of the voting.

ARTICLE 43

The present Convention may not be denounced before January 1st, 1922, such denunciation shall not take effect until at least one year after the giving of notice, and shall take effect only with respect to the Power which has given notice.

In case of denunciation, notification thereof shall be made to the Government of the French Republic, which shall communicate it to the contracting Parties.

ANNEX A.

THE MARKING OF AIRCRAFT.

SECTION I.

GENERAL.

(a) The nationality mark will be represented by capital letters in Roman characters, *e.g.*,

France.....F.

The registration mark shall be represented by a group of four capital letters; each group shall contain at least one vowel, and for this purpose the letter Y shall be considered as a vowel. The complete group of five letters shall be used as a call sign of the particular aircraft in making or receiving signals by wireless telegraphy or other methods of communication, except when opening up communication by means of visual signals, when the usual methods will be employed. The nationality and registration marks are assigned in accordance with the table contained in section VIII of this Annex.

(b) On aircraft, other than State and commercial, the registration mark shall be underlined with a black line.

(c) The entry in the register and the certificate of registration shall contain a description of the aircraft and shall indicate the number or other identification mark given to it by the maker; the nationality and registration marks mentioned above; the usual station of the aircraft; the full name, nationality, and residence of the owner and the date of registration.

(d) All aircraft shall carry affixed to the car or to the fuselage in a prominent position a metal plate, inscribed with the names and residence of the owner and the marks of nationality and registration.

CERTIFICATE OF REGISTRATION.

(Provisional Form.)

Nationality.....
Nationality mark.....
Registration marks.....
Date of registration.....

Type of Aircraft..	{	Tourist.....
		Commercial.....
		State.....
Maker.....		
Maker's number.....		
Description.....		
Owner's full name.....		
Owner's residence.....		
Owner's nationality.....		
Station of the craft.....		
Signature and seal of authority issuing this certificate.	{	

SECTION II.

LOCATION OF MARKS.

The nationality and registration marks shall be painted in black on a white ground in the following manner:—

(a) *Flying Machines*.—The marks shall be painted once on the lower surface of the lower main planes and once on the upper surface of the top main planes, the top of the letters to be towards the leading edge. They shall also be painted along each side of the fuselage between the main planes and the tail planes. In cases where the machine is not provided with a fuselage the marks shall be painted on the nacelle.

(b) *Airships and Balloons*.—In the case of airships the marks shall be painted near the maximum cross section on both sides and on the upper surface equidistant from the letters on the sides.

In the case of balloons the marks shall be painted twice near the maximum horizontal circumference, as far as possible from one another.

In the case both of airships and balloons the side marks shall be visible both from the sides and ground.

SECTION III.

ADDITIONAL LOCATION OF NATIONALITY MARKS.

(a) *Flying Machines and Airships*.—The nationality mark shall also be painted on the left and right sides of the lower surface of the lowest tail planes or elevators

and also on the upper surface of the top tail planes or elevators, whichever is the larger. It shall also be painted on both sides of the rudder, or on the outer sides of the outer rudders if more than one rudder is fitted.

(b) *Balloons*.—The nationality mark shall be painted on the basket.

SECTION IV.

MEASUREMENTS OF NATIONALITY AND REGISTRATION MARKS.

(a) *Flying Machines*.—The height of the marks on the main planes and tail planes respectively shall be equal to four-fifths of the chord, and in the case of the rudder shall be as large as possible. The height of the marks on the fuselage or nacelle shall be four-fifths of the depth of the narrowest part of that portion of the fuselage or nacelle on which the marks are painted.

(b) *Airships and Balloons*.—In the case of airships, the nationality marks painted on the tail plane shall be equal in height to four-fifths of the chord of the tail plane and in the case of the rudder the marks shall be as large as possible. The height of the other marks shall be equal to at least one-twelfth of the circumference at the maximum transverse cross section of the airship.

In the case of balloons the height of the nationality mark shall be four-fifths of the height of the basket, and the height of the other marks shall be equal to at least one-twelfth of the circumference of the balloon.

(c) *General*.—In the case of all aircraft the letters of the nationality and registration marks need not exceed 2·5 metres in height.

SECTION V.

MEASUREMENT, TYPE OF LETTERS, ETC.

(a) The width of the letters shall be two-thirds of their height and the thickness shall be one-sixth of their height. The letters shall be painted in plain block type and shall be uniform in shape and size. A space equal to half the width of the letters shall be left between the letters.

(b) In the case of underlined letters the thickness of the line shall be equal to the thickness of the letter and the space between the bottom of the letters and the line shall be equal to the thickness of the line.

SECTION VI.

SPACING BETWEEN NATIONALITY AND REGISTRATION
MARKS.

Where the nationality and registration marks appear together, a hyphen of a length equal to the width of one of the letters shall be painted between the nationality mark and registration mark.

SECTION VII.

MAINTENANCE.

The nationality and registration marks shall be displayed to the best possible advantage, taking into consideration the constructional features of the aircraft. The marks must be kept clear and visible.

SECTION VIII.

TABLE OF MARKS.

The nationality mark of the State named below applies to the aircraft of its Dominions, Colonies, Protectorates, dependencies, or of countries of which it is the Mandatory State.

Country.	Nationality Mark.	Registration Marks.
United States of America..	N	All combinations made in accordance with the provisions of Section I (a) of this Annex, using a group of 4 letters out of the 26 of the alphabet, each group containing at least one vowel, <i>e.g.</i> , ADCJ, PURN.
British Empire.....	G	
France.....	F	
Italy.....	I	
Japan.....	J	All combinations made with B as first letter.
Bolivia.....	C	
Cuba.....	C	All combinations made with C as first letter.
Portugal.....	C	All combinations made with P as first letter.
Roumania.....	C	All combinations made with R as first letter.
Uruguay.....	C	All combinations made with U as first letter.
Czecho-Slovakia.....	L	All combinations made with B as first letter.
Guatemala.....	L	All combinations made with G as first letter.
Liberia.....	L	All combinations made with L as first letter.
Brazil.....	P	All combinations made with B as first letter.
Poland.....	P	All combinations made with P as first letter.
Belgium.....	O	All combinations made with B as first letter.
Peru.....	O	All combinations made with P as first letter.
China.....	X	All combinations made with C as first letter.
Honduras.....	X	All combinations made with H as first letter.
Serbia-Croatia-Slavonia....	X	All combinations made with S as first letter.
Haiti.....	H	All combinations made with H as first letter.
Siam.....	H	All combinations made with S as first letter.
Ecuador.....	E	All combinations made with E as first letter.
Greece.....	S	All combinations made with G as first letter.
Panama.....	S	All combinations made with P as first letter.
Hedjaz.....	A	All combinations made with H as first letter.
Nicaragua.....	A	All combinations made with N as first letter.

ANNEX B.

CERTIFICATES OF AIRWORTHINESS.

The following main conditions govern the issue of certificates of airworthiness:—

1. The design of the aircraft in regard to safety shall conform to certain standard minimum requirements.

2. A satisfactory demonstration must be made in flying trials of the actual flying qualities of the type of aircraft examined, provided that machines subsequently manufactured which conform to the approved type need not be subject to such trials. The trials shall conform to certain standard minimum requirements.

3. The construction of every aircraft with regard to workmanship and materials must be approved. The control of the construction and of the tests shall be in accordance with certain standard minimum requirements.

4. The aircraft must be equipped with suitable instruments for safe navigation.

5. The standard minimum requirements of paragraphs 1 to 3 inclusive shall be fixed by the International Commission for Air Navigation. Until they have been so fixed each contracting State shall determine the regulations under which certificates of airworthiness shall be granted or remain valid.

ANNEX C.

LOG BOOKS.

I.

JOURNEY LOG.

This shall be kept for all aircraft and shall contain the following particulars:—

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner; name of maker and the carrying capacity of the aircraft.

(b) In addition for each journey—

(i) The names, nationality and residence of each of the members of the crew.

(ii) The place, date, and hour of departure, the route followed, and all incidents *en route* including landings.

II.

AIRCRAFT LOG.

This is obligatory only in the case of aircraft carrying passengers or goods for hire, and shall contain the following particulars:—

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner; name of maker and the carrying capacity of the aircraft.

(b) Type and series number of engine; type of propeller showing number, pitch, diameter and maker's name.

(c) Type of wireless apparatus fitted.

(d) Table showing the necessary rigging data for the information of persons in charge of the aircraft and of its maintenance.

(e) A fully detailed engineering record of the life of the aircraft, including all acceptance tests, overhauls, replacements, repairs and all works of a like nature.

III.

ENGINE LOG.

This is obligatory only in the case of engines installed in aircraft carrying passengers or goods for hire, and in such

cases a separate log book shall be kept for each engine and shall always accompany the engine. It shall contain the following particulars:—

(a) Type of engine, series number, maker's name, power, normal maximum revolutions of engine, date of production and first date put into service.

(b) Registration mark and type of aircraft in which the engine has been installed.

(c) A fully detailed engineering record of the life of the engine including all acceptance tests, hours run, overhauls, replacements, repairs, and all work of a like nature.

IV.

SIGNAL LOG.

This is obligatory only in the case of aircraft carrying passengers or goods for hire, and shall contain the following particulars:—

(a) Category to which the aircraft belongs; its nationality and registration marks; the full name, nationality and residence of the owner.

(b) Place, date, and time of the transmission or reception of any signal.

(c) Name or other indication of the person or station to whom a signal is sent or from whom a signal is received.

V.

INSTRUCTIONS FOR USE OF LOG BOOK.

(a) The constructor should fill in and sign the original entries in the log books, as far as he is in a position to do so. Subsequent entries should be made and signed by the pilot or other competent person.

(b) A copy of the certificate of airworthiness should be kept in the pocket of the aircraft log book.

(c) All entries to be in ink, except in the case of journey and signal log books; the entries for these may be made in pencil in a rough note book, but shall be entered in ink in the log book every 24 hours. In the event of any official investigation the rough note book may be called for.

(d) No erasures shall be made in, nor pages torn from, any log book.

(e) A copy of these instructions should be inserted in each log book.

ANNEX D.

RULES AS TO LIGHTS AND SIGNALS.
RULES OF THE AIR.

DEFINITIONS.

The word "aircraft" comprises all balloons, whether fixed or free, kites, airships, and flying machines.

The word "balloon," either fixed or free, shall mean an aircraft using gas lighter than air as a means of support, and having no means of propulsion.

The word "airship" shall mean an aircraft using gas lighter than air as a means of support, and having means of propulsion.

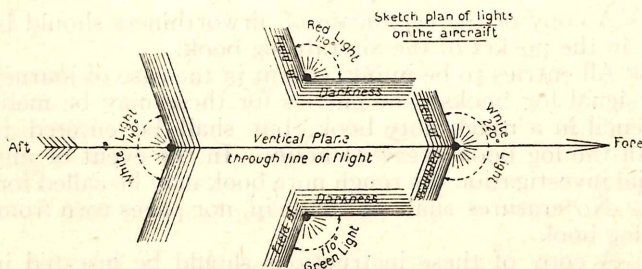
The word "flying machine" shall mean all aeroplanes, seaplanes, flying boats, or other aircraft heavier than air, and having means of propulsion.

An airship is deemed to be "under way" within the meaning of these rules when it is not made fast to the ground or any object on land or water.

SECTION I.

RULES AS TO LIGHTS.

The word "visible" in these rules when applied to lights shall mean visible on a dark night with a clear atmosphere. The angular limits laid down in these rules as shown in the sketch (attached) shall be determined when the aircraft is in its normal attitude for flying on a rectilinear horizontal course.



1 The rules concerning lights shall be complied with in all weathers from sunset to sunrise, and during such time

no other lights which may be mistaken for the prescribed lights shall be exhibited. The prescribed navigation lights must not be dazzling.

2. A flying machine, when in the air or manœuvring on land or water under its own power, shall carry the following lights:—

(a) Forward, a white light visible in a dihedral angle of 220 degrees bisected by a vertical plane through the line of flight, and of such a character as to be visible at a distance of at least 8 kilometres.

(b) On the right side, a green light so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is 110 degrees when measured to the right from dead ahead, and of such a character as to be visible at a distance of at least 5 kilometres.

(c) On the left side, a red light so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is 110 degrees when measured to the left from dead ahead, and of such a character as to be visible at a distance of at least 5 kilometres.

(d) The said green and red side lights shall be fitted so that the green light shall not be seen from the left side, nor the red light from the right side.

(e) At the rear, and as far aft as possible, a white light shining rearwards and visible in a dihedral of 140 degrees bisected by a vertical plane through the line of flight and of such a character as to be visible at a distance of at least 5 kilometres.

(f) In the case where, in order to fulfil the above conditions the single light has to be replaced by several lights, the field of visibility of each of these lights should be so limited that only one can be seen at a time.

3. The rules determined for the lighting of flying machines shall apply to airships subject to the following modifications —

(a) All lights shall be doubled; the forward and aft lights vertically, and the side lights horizontally in a fore and aft direction.

(b) Both lights of each pair forward and aft shall be visible at the same time.

The distance between the lights comprising a pair shall not be less than 2 metres.

4. An airship, when being towed, shall carry the lights specified in paragraph 3, and, in addition, those specified in paragraph 6 for airships not under control.

5.—(a) A flying machine, or airship, when on the surface of the water, and when not under control, that is to say, not able to manœuvre as required by the Regulations for the Prevention of Collisions at Sea, shall carry two red lights not less than 2 metres apart one over the other, and of such a character as to be visible all around the horizon at a distance of at least 3 kilometres.

(b) The aircraft referred to in this paragraph, when not making way through the water, shall not carry the side lights, but when making way shall carry them.

6. An airship which from any cause is not under control, or which has voluntarily stopped her engines shall, in addition to the other specified lights, display conspicuously two red lights, one over the other, not less than 2 metres apart, and constructed to show a light in all directions, and of such a character as to be visible at a distance of at least 3 kilometres.

By day an airship, when being towed, which from any cause is not under control, shall display conspicuously two black balls or shapes, each 60 cms. in diameter, placed one over the other not less than 2 metres apart.

An airship moored, or under way but having voluntarily stopped its engines, shall display conspicuously by day a black ball or shape, 60 cms. in diameter, and shall be treated by other aircraft as being not under control.

7. A free balloon shall carry one bright white light below the car at a distance of not less than 5 metres, and so constructed as to show an unbroken light in all directions, and of such a character as to be visible at a distance of at least 3 kilometres.

8. A fixed balloon shall carry in the same position as the white light mentioned in paragraph 7, and in lieu of that light, three lights in a vertical line one over the other, not less than 2 metres apart. The highest and lowest of these lights shall be red, and the middle light shall be white, and they shall be of such a character as to be visible in all directions at a distance of at least 3 kilometres.

In addition, the mooring cable shall have attached to it at intervals of 300 metres, measured from the basket, groups of three lights similar to those mentioned in the preceding paragraph. In addition, the object to which the balloon is moored on the ground shall have a similar group of lights to mark its position.

By day the mooring cable shall carry in the same position as the groups of lights mentioned in the preceding paragraph, and in lieu thereof, tubular streamers not less than 20 cms. in diameter and 2 metres long, and marked with alternate bands of white and red, 50 cms. in width.

9. An airship when moored near the ground shall carry the lights specified in paragraphs 2 (a) and (e) and 3.

In addition, if moored but not near the ground, the airship, the mooring cable, and the object to which moored, shall be marked in accordance with the provisions of paragraph 8, whether by day or by night.

Sea anchors or drogues used by airships for mooring purposes at sea are exempt from this regulation.

10. A flying machine stationary upon the land or water but not anchored or moored shall carry the lights specified in paragraph 2.

11. In order to prevent collisions with surface craft:—

(a) A flying machine when at anchor or moored on the water shall carry forward, where it can best be seen, a white light, so constructed as to show an unbroken light visible all round the horizon at a distance of at least 2 kilometres.

(b) A flying machine of 50 metres or upwards in length, when at anchor or moored on the water, shall, in the forward part of the flying machine, carry one such light, and at or near the stern of the flying machine, and at a height that it shall not be less than 5 metres lower than the forward light, another such light.

The length of a flying machine shall be deemed to be the overall length.

(c) Flying machines of 50 metres or upwards in span, when at anchor or moored in the water, shall in addition carry at each lower wing tip one light as specified in (a) of this paragraph.

The span of a flying machine shall be deemed to be the maximum lateral dimension.

12. In the event of the failure of any of the lights specified under these rules to be carried by aircraft flying at night, such aircraft shall land at the first reasonably safe opportunity.

13. Nothing in these rules shall interfere with the operation of any special rules made by the Government of any State with respect to the additional station or signal lights for two or more military aircraft, or for aircraft in

formation, or with the exhibition of recognition signals adopted by owners of aircraft which have been authorized by their respective Governments and duly registered and published.

SECTION II.

RULES AS TO SIGNALS.

14.—(a) Aircraft wishing to land at night on aerodromes having a ground control shall before landing:—

Fire a green Very's light or flash a green lamp, and in addition shall make by international Morse code the letter-group forming its call-sign.

(b) Permission to land will be given by the repetition of the same call-sign from the ground, followed by:—

A green Very's light or flashing a green lamp.

15. The firing of a red Very's light or the display of a red flare from the ground shall be taken as an instruction that aircraft are not to land.

16. An aircraft compelled to land at night shall, before landing, fire a red Very's light or make a series of short flashes with the navigation lights.

17. When an aircraft is in distress and requires assistance, the following shall be the signals to be used or displayed, either together or separately:—

(a) The international signal, -SOS, by means of visual or wireless signals.

(b) The international code flag signal of distress, indicated by NC.

(c) The distant signal, consisting of a square flag having either above or below it a ball, or anything resembling a ball.

(d) A continuous sounding with any sound apparatus.

(e) A signal, consisting of a succession of white Very's lights fired at short intervals.

18. To warn an aircraft that it is in the vicinity of a prohibited zone and should change its course, the following signals shall be used:—

(a) By day: three discharges, at intervals of 10 seconds, of a projectile showing, on bursting, white smoke, the location of the burst indicating the direction the aircraft should follow.

(b) By night: three discharges, at intervals of 10 seconds, of a projectile showing, on bursting, white stars, the

location of the burst indicating the direction the aircraft should follow.

19. To require an aircraft to land, the following signals shall be used —

(a) By day: three discharges, at intervals of 10 seconds, of a projectile showing on bursting black or yellow smoke.

(b) By night: three discharges, at intervals of 10 seconds, of a projectile showing on bursting red stars or lights.

In addition, when necessary to prevent the landing of aircraft other than the one ordered, a searchlight which shall be flashed intermittently shall be directed towards the aircraft whose landing is required.

20.—(a) In the event of fog or mist rendering aerodromes invisible, their presence may be indicated by a balloon acting as an aerial buoy and or other approved means.

(b) In fog, mist, falling snow or heavy rainstorm, whether by day or night, an aircraft on the water shall make the following sound signals with a sound apparatus:—

(1) If not anchored or moored, a sound at intervals of not more than two minutes, consisting of two blasts of about five seconds duration with an interval of about one second between them.

(2) If at anchor or moored, the rapid ringing of an efficient bell or gong for about five seconds at intervals of not more than one minute.

SECTION III.

RULES OF THE AIR.

21. Flying machines shall always give way to balloons, fixed or free, and to airships. Airships shall always give way to balloons, whether fixed or free.

22. An airship, when not under its own control, shall be classed as a free balloon.

23. Risk of collision can, when circumstances permit, be ascertained by carefully watching the compass bearing and angle of elevation of an approaching aircraft. If neither the bearing nor the angle of elevation appreciably change, such risk shall be deemed to exist.

24. The term "risk of collision" shall include risk of injury due to undue proximity of other aircraft. Every aircraft that is required by these rules to give way to another to avoid collision shall keep a safe distance, having regard to the circumstances of the case.

25. While observing the rules regarding risk of collision contained in paragraph 24, a motor-driven aircraft must always manœuvre according to the rules contained in the following paragraphs as soon as it is apparent that, if it pursued its course, it would pass at a distance of less than 200 metres from any part of another aircraft.

26. When two motor-driven aircraft are meeting end on, or nearly end on, each shall alter its course to the right.

27. When two motor-driven aircraft are on courses which cross, the aircraft which has the other on its own right side shall keep out of the way of the other.

28. An aircraft overtaking any other shall keep out of the way of the overtaken aircraft by altering its own course to the right, and must not pass by diving.

Every aircraft coming up with another aircraft from any direction more than 110 degrees from ahead of the latter, *i.e.*, in such a position with reference to the aircraft which it is overtaking that at night it would be unable to see either of that aircraft's side lights, shall be deemed to be an overtaking aircraft, and no subsequent alteration of the bearing between the two aircraft shall make the overtaking aircraft a crossing aircraft within the meaning of these rules, or relieve it of the duty of keeping clear of the overtaken aircraft until it is finally past and clear.

As by day the overtaking aircraft cannot always know with certainty whether it is forward or abaft the direction mentioned above from the other aircraft, it should, if in doubt, assume that it is an overtaking aircraft and keep out of the way.

29. Where by any of these rules one of the two aircraft is to keep out of the way, the other shall keep its course and speed. When, in consequence of thick weather or other causes, the aircraft having the right of way finds itself so close that collision cannot be avoided by the action of the giving-way aircraft alone, it shall take such action as will best aid to avert collision.

30. Every aircraft which is directed by these rules to keep out of the way of another aircraft shall, if the circumstances of the case admit, avoid crossing ahead of the other.

31. In following an officially recognized air route every aircraft, when it is safe and practicable, shall keep to the right side of such route

32. All aircraft on land or sea about to ascend shall not attempt to "take off" until there is no risk of collision with alighting aircraft.

33. Every aircraft in a cloud, fog, mist, or other conditions of bad visibility shall proceed with caution, having careful regard to the existing circumstances and conditions.

34. In obeying and construing these rules, due regard shall be had to all dangers of navigation and collision and to any special circumstances which may render a departure from the above rules necessary in order to avoid immediate danger.

SECTION IV.

BALLAST.

35. The dropping of ballast other than fine sand or water from aircraft in the air is prohibited.

SECTION V.

RULES FOR AIR TRAFFIC ON AND IN THE VICINITY OF AERODROMES.

36. At every aerodrome there shall be a flag hoisted in a prominent position which shall indicate that if an aircraft about to land or leave finds it necessary to make a circuit, or partial circuit, such circuit shall be left-handed (anti-clockwise) or right-handed (clockwise), according to the colour of the flag. A white flag shall indicate a right-handed circuit, *i.e.*, that the flag is kept to the right side or side which carries the green light of the aircraft, and a red flag shall indicate a left-handed circuit, *i.e.*, that the red flag is kept to the left side or side which carries the red light of the aircraft.

37. When an aeroplane starts from an aerodrome it shall not turn until 500 metres distance from the nearest point of the aerodrome, and the turning then must conform with the regulations provided in the preceding paragraph.

38. All aeroplanes flying between 500 and 1,000 metres distance from the nearest point of an aerodrome shall conform to the above-mentioned circuit law, unless such aeroplanes are flying at a greater height than 2,000 metres.

39. Acrobatic landings are prohibited at aerodromes of contracting States used for international aerial traffic.

Aircraft are prohibited from engaging in aerial acrobatics within a distance of at least 2,000 metres from the nearest point of such aerodromes.

40. At every recognized aerodrome the direction of the wind shall be clearly indicated by one or more of the recognized methods, *e.g.*, landing tee, conical streamer, smudge fire, etc.

41. Every aeroplane when taking off or alighting on a recognized aerodrome used for international air traffic shall do so up-wind, except when the natural conditions of the aerodrome do not permit.

42. In the case of aeroplanes approaching aerodromes for the purpose of landing, the aeroplanes flying at the greater height shall be responsible for avoiding the aeroplane at the lower height, and shall as regards landing observe the rules of paragraph 28 for passing.

43. Aeroplanes showing signals of distress shall be given free way in attempting to make a landing on an aerodrome.

44. Every aerodrome shall be considered to consist of three zones when looking up-wind. The right-hand zone shall be the taking-off zone, and the left-hand shall be the landing zone. Between these there shall be a neutral zone. An aeroplane when landing should attempt to land as near as possible to the neutral zone, but in any case on the left of any aeroplanes which have already landed. After slowing up or coming to a stop at the end of its landing run, an aeroplane will immediately taxi into the neutral zone. Similarly, an aeroplane when taking off shall keep as far as possible towards the right of the taking-off zone, but shall keep clear to the left of any aeroplanes which are taking off or about to take off.

45. No aeroplane shall commence to take off until the preceding aeroplane is clear of the aerodrome.

46. The above rules shall apply equally to night landings on aerodromes, when the signals shall be as follows:—

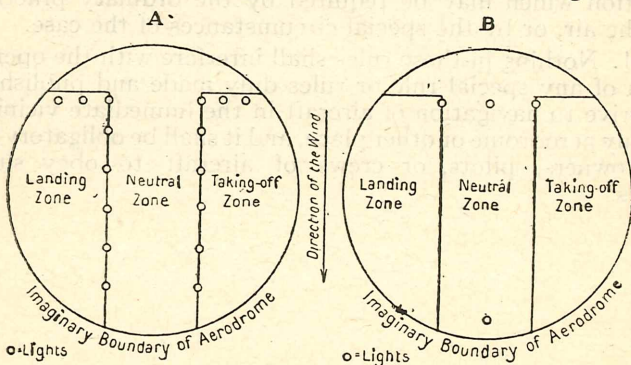
(a) A red light shall indicate a left-hand circuit, and a green light shall indicate a right-hand circuit (*see* paragraph 36). The right-hand zone will be marked by white lights placed in the position of an "L," and the left-hand zone will be similarly marked. The "L's" shall be back to back, that is to say, the long sides of the "L's" will indicate the borders of the neutral zone, the direction of landing shall invariably be along the long arm of the "L," and towards the short arm. The lights of the "L's" should

be so placed that the lights indicating the top extremity of the long arm shall be the nearest point on the aerodrome upon which an aeroplane can safely touch ground. The lights indicating the short arm of the "L" should indicate the limit of safe landing ground for the aeroplanes, that is, the aeroplane should not overrun the short arm. (See Diagram A.).

(b) Where it is desired to save lights and personnel the following system may be used:—

Two lights shall be placed on the windward side of the aerodrome to mark the limits of the neutral zone mentioned in paragraph 44, the line joining the lights being at right angles to the direction of the wind. Two more lights shall be placed as follows: one on the leeward side of the aerodrome on the line drawn parallel to the direction of the wind and passing midway between the two lights on the windward side, to show the extent of the aerodrome and the direction of the wind, and the other shall be placed midway between the two lights marking the limits of the neutral zone. (See Diagram B.).

5. Location of Lights at Aerodromes at Night.



Night Lights only.

Additional lights may be symmetrically put along the boundary lines of the neutral zone, and on the ends of the taking-off and landing zones on the line through the three lights on the windward side.

47. No fixed balloon, kite, or moored airship shall be elevated in the vicinity of any aerodrome without a special authorization, except in the cases provided for in paragraph 20.

48. Suitable markings shall be placed on all fixed obstacles, dangerous to flying within a zone of 500 metres of all aerodromes.

SECTION VI.

GENERAL.

49. Every aircraft manœuvring under its own power on the water shall conform to the Regulations for Preventing Collisions at Sea, and for the purposes of these regulations shall be deemed to be a steam-vessel, but shall carry the lights specified in the preceding rules, and not those specified for steam-vessels in the Regulations for Preventing Collisions at Sea, and shall not use, except as specified in paragraphs 17 and 20 above, or be deemed to hear the sound signals specified in the above-mentioned Regulations.

50. Nothing in these rules shall exonerate any aircraft, or the owner, pilot or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of the neglect of any precaution which may be required by the ordinary practice of the air, or by the special circumstances of the case.

51. Nothing in these rules shall interfere with the operation of any special rule or rules duly made and published relative to navigation of aircraft in the immediate vicinity of any aerodrome or other place, and it shall be obligatory on all owners, pilots, or crews of aircraft to obey such rules.

ANNEX E.

MINIMUM QUALIFICATIONS NECESSARY FOR OBTAINING CERTIFICATES AS PILOTS AND NAVIGATORS.

SECTION I.

CERTIFICATES FOR PILOTS OF FLYING MACHINES.

(A.) PRIVATE PILOT'S FLYING CERTIFICATE (not valid for purposes of public transport).

1. *Practical Tests:*

In each practical test the candidate must be alone in the flying machine.

(a) *Test for Altitude and Gliding Flight.*—A flight without landing, during which the pilot shall remain for at least an hour at a minimum altitude of 2,000 metres above the point of departure. The descent shall finish with a glide, the engines cut off at 1,500 metres above the landing ground. The landing shall be made without restarting the engine and within 150 metres or less of a point fixed beforehand by the official examiners of the test.

(b) *Tests of Skill.*—A flight without landing around two posts (or buoys) situated 500 metres apart, making a series of five figure-of-eight turns, each turn reaching one of the two posts (or buoys). This flight shall be made at an altitude of not more than 200 metres above the ground (or water) without touching the ground (or water). The landing shall be effected by:

(i) Finally shutting off the engine or engines at latest when the aircraft touches the ground (or water).

(ii) Finally stopping the flying machine within a distance of 50 metres from a point fixed by the candidate before starting.

2. *Special Requirements:*

Knowledge of rules as to Lights and Signals, and Rules of the Air. Rules for Air Traffic on and in the vicinity of Aerodromes. A practical knowledge of international air legislation.

(B.) PILOT'S FLYING CERTIFICATE FOR FLYING MACHINES
USED FOR PURPOSES OF PUBLIC TRANSPORT.

1. *Practical Tests:*

In each practical test the candidate must be alone in the flying machine.

(a) The tests for altitude and gliding flight and for skill are the same as those required for a private pilot's flying certificate. Candidates already in possession of the latter certificate are not required to pass these tests again.

(b) Test of endurance consisting of a cross-country or oversea flight of at least 300 kilometres, after which the final landing shall be made at the point of departure. This flight shall be made in the same flying machine within eight hours. It shall include two obligatory landings (during which the machine must come to rest), which shall not be at the point of departure, but which shall be fixed by the judges.

At the time of departure the candidate shall be informed of his course and furnished with the appropriate map. The judges will decide whether the course has been correctly followed.

(c) *Night Flight.*—A thirty minutes' flight made between two hours after sunset and two hours before sunrise, at a height of at least 500 metres.

2. *Technical Examination:*

After satisfactory practical tests have been passed, candidates will, when summoned, submit themselves to examination on—

(a) *Flying Machines:*

Theoretical knowledge of the resistance of the air as concerns its effects on wings and tail planes, rudders, elevators, and propellers; functions of the different parts of the machine and of their controls.

Assembling of flying machines and their different parts.
Practical tests on rigging.

(b) *Engines:*

General knowledge of internal combustion engines, including functions of the various parts; a general knowledge of the construction, assembling, adjustment, and characteristics of aero-engines.

Causes of the faulty running of engines and of breakdown.

Practical tests in running repairs.

(c) *Special Requirements:*

Knowledge of Rules as to Lights and Signals and Rules of the Air, and Rules for Air Traffic on and in the vicinity of Aerodromes.

Practical knowledge of the special conditions of air traffic and of international air legislation.

Map reading, orientation, location of position, elementary meteorology.

REMARKS.

The practical tests shall be carried out within a maximum period of one month.

They may be carried out in any order, and each may be attempted twice. They shall be witnessed by properly accredited examiners, who will forward the official reports to the proper authorities.

The official reports will give the different incidents, especially those of landings. The candidates shall furnish before each test proper identity forms.

A barograph shall be carried on all practical tests, and the graph, signed by the examiners, shall be attached to their report.

Pilots who hold the military pilot's certificate shall be entitled to the private pilot's flying certificate, but, in order to obtain the pilot's flying certificate for purposes of public transport it will be necessary to pass the technical conditions for navigation as required by B (2) (c).

SECTION II.

CERTIFICATES FOR PILOTS OF BALLOONS.

1. *Practical Tests:*

The candidate must have completed the following certified ascents—

1. By day: 3 ascents under instruction.
 - 1 ascent in control under supervision.
 - 1 ascent alone in the balloon.

2. By night: 1 ascent alone in the balloon.

Each ascent shall be of at least two hours' duration.

2. *Theoretical Tests:*

Elementary aerostatics and meteorology.

3. *Special Requirements:*

General knowledge of a balloon and its accessories; inflation: rigging; management of an ascent; instruments; precautions against cold and high altitudes.

Knowledge of Rules as to Lights and Signals and Rules of the Air; Rules for Air Traffic on and in the Vicinity of Aerodromes.

Practical knowledge of international air legislation.
Map reading and orientation.

SECTION III.

CERTIFICATES FOR AIRSHIP OFFICER PILOTS.

Every airship officer pilot shall have qualified as pilot of a free balloon.

There shall be three classes of airship officer pilots.

The holder of a first-class certificate is qualified to command any airship.

The holder of a second-class certificate is qualified to command airships under 20,000 cubic metres capacity.

The holder of a third-class certificate is qualified to command airships under 6,000 cubic metres capacity.

All military and naval airship officer pilots are entitled to a third-class certificate.

All military and naval airship officer pilots who have commanded airships over 6,000 cubic metres capacity are entitled to a first-class certificate.

QUALIFICATIONS FOR THIRD-CLASS CERTIFICATE.

Practical Tests:

(a) Twenty certified flights (three of which shall be by night) in an airship, each flight being of at least one hour's duration. In at least four of these flights the candidate must have handled the airship himself, under the supervision of the commanding officer of the airship, including ascent and landing.

(b) One cross-country flight on a predetermined course of at least 100 kilometres, terminating with a night landing, and made with a duly authorized inspector on board.

Theoretical Examination:

Aerostatics and meteorology. (Density of gases, laws of Mariotte and Gay-Lussac; barometric pressure, Archimedes principle; confinement of gases; interpretation and use of meteorological information and of weather charts.)

Physical and chemical properties of light gases, and of materials used in the construction of airships.

General theory of airships.

Dynamic properties of moving bodies in air.

General Knowledge:

Elementary knowledge of internal combustion engines.

Elementary navigation; use of the compass; location of position.

Inflation; stowage; rigging; handling; controls and instruments.

QUALIFICATIONS FOR SECOND-CLASS CERTIFICATE.

Practical Tests:

To be eligible for a second-class certificate a candidate must be holder of a third-class certificate and have at least four months' service as a third-class officer on an airship, and also have completed at least 10 flights as third-class officer on an airship of capacity above 6,000 cubic metres, in which he has handled the airship himself including ascent and landing, under the supervision of the commanding officer of the airship.

Theoretical Examination:

Advanced knowledge of the subjects required for the third-class certificate.

QUALIFICATIONS FOR FIRST-CLASS CERTIFICATE.

Practical Tests:

To be eligible for a first-class certificate a candidate must be holder of a second-class certificate, have at least two months' active service as a second-class officer on an airship, and also have completed at least five flights as second-class officer of an airship of capacity above 20,000 cubic metres, in which he has handled the airship himself, including ascent and landing, under the supervision of the commanding officer of the airship. Each flight must be at least of one hour's duration with a minimum of 15 hours for the five flights.

Theoretical Examination.

As required for a second-class certificate.

SECTION IV.

CERTIFICATE FOR NAVIGATORS.

Aircraft used for public transport carrying more than 10 passengers and having to make a continuous flight between two points more than 500 kilometres apart overland, or a night flight, or a flight between two points more than 200 kilometres apart over sea, must have on board a navigator who has been granted a certificate as such after passing a theoretical and practical examination in the following:—

1. *Practical Astronomy:*

True and apparent movements of the celestial bodies.
Different aspects of the celestial sphere.

Hour angles, mean, true, and astronomical time.

Shape and dimensions of the earth.

Star globes and maps.

Method of determining latitude, longitude, time and azimuth.

2. *Navigation:*

Maps and charts—how to read them.

Compass, magnetic meridian, variation, deviation.

Courses, bearings, and their corrections.

Compensation of compasses (technical and practical).

Calculations of azimuth.

Flight by dead reckoning, measure of the relative speed, drift, traverse table.

Chronometer, chronometer rate, comparisons.

Sextants, adjustments.

Nautical almanac.

Determination of positions by means of bearing and altitude of stars.

Knowledge of great circle navigation.

Aeronautical navigational instruments.

3. *General Knowledge:*

International rules for air and maritime navigation.

International air legislation.

Practical knowledge of meteorology and of weather charts.

SECTION V.

MEDICAL CERTIFICATES.

International Medical Requirements for Air Navigation.

1. Every candidate before obtaining a license as a pilot, navigator or engineer of aircraft engaged in public transport will present himself for examination by specially qualified medical men (flight surgeons), appointed by or acting under the authority of the contracting State.

2. Medical supervision, both for the selection and the maintenance of efficiency, shall be based upon the following requirements of mental and physical fitness:—

(a) Good family and personal history, with particular reference to nervous stability. Absence of any mental, moral or physical defect which will interfere with flying efficiency.

(b) The minimum age for pilots and navigators engaged in public transport shall be nineteen (19) years.

(c) *General Surgical Examination.*—The aeronaut must neither suffer from any wound, injury or operation nor possess any abnormality, congenital or otherwise, which will interfere with the efficient and safe handling of aircraft.

(d) *General Medical Examination.*—The aeronaut must not suffer from any disease or disability which renders him liable suddenly to become incompetent in the management of aircraft. He must possess heart, lungs, kidneys and nervous system capable of withstanding the effects of altitude and also the effects of prolonged flight.

(e) *Eye Examination.*—The aeronaut must possess a degree of visual acuity compatible with the efficient performance of his duties. No pilot or navigator shall have more than two (2) dioptries of latent hypermetropia: muscle balance must be good and commensurate with the refraction. He must have a good field of vision in each eye and must possess normal colour perception.

(f) *Ear Examination.*—The middle ear must be healthy. The aeronaut must possess a degree of auditory acuity compatible with the efficient performance of his duties.

(g) The vestibular mechanism must be intact and neither unduly hypersensitive or hyposensitive.

(h) *Nose and Throat Examination*.—The aeronaut must possess free nasal air entry on either side and not suffer from serious, acute or chronic affections of the upper respiratory tract.

3. Each contracting State shall for the present fix its own methods of examination until the detail of tests and the minimum standard of requirements have been finally settled by the authorized medical representatives of the International Commission for Air Navigation.

4. The successful candidate will receive a medical certificate of acceptance, which must be produced before the license can be issued.

5. In order to insure the maintenance of efficiency, every aeronaut shall be re-examined periodically, at least every six months, and the findings shall be attached to his original record. In case of illness or accident also, an aeronaut shall be re-examined and pronounced fit before resuming air duties. The date and result of each re-examination shall be recorded on the aeronaut's flying certificate.

6. No aeronaut who, before the date of the present Convention, has given proof of his flying ability, shall, so long as he retains such ability, be necessarily disqualified because he fails to fulfil all of the above requirements.

7. Each contracting State may raise the conditions set forth above, as it deems fit, but these minimum requirements shall be maintained internationally.

ANNEX F.

INTERNATIONAL AERONAUTICAL MAPS AND GROUND MARKINGS.

International maps shall be made and ground marks established in accordance with the following general principles:—

SECTION I.

MAPS.

1. Two types of aeronautical maps shall be used. They are hereafter mentioned as *general* maps and *local* maps.

2. The index scheme for the aeronautical maps, both general and local, shall be based on the index scheme adopted for the "International 1: 1,000,000 scale map" by the official International Congress convened for the purpose in London in 1909 and in Paris in 1913.

NOTE.—Extract from the resolutions adopted by the Conferences at London and Paris;

The sheets of the International 1: 1,000,000 scale map shall include 6 degrees of longitude and 4 degrees of latitude. The limiting meridians of the sheets shall be at successive intervals, reckoning from Greenwich, of 6 degrees, and the limiting parallels, reckoning from the Equator, shall be at successive intervals of 4 degrees.

The longitudinal sectors, from longitude 180° E. or W. of Greenwich, are given numbers from 1 to 60, increasing in an easterly direction.

The 22 zones of 4 degrees in depth, extending from the Equator on each side to 88° latitude, are given letters from A to V.

The polar areas, extending for 2 degrees, are lettered Z.

In the northern hemisphere each sheet shall bear a descriptive symbol composed of the letter N, followed by the zone letter and sector number corresponding to its position, thus N.K.—12.

In the southern hemisphere the letter S shall replace the letter N. Example, S.L.—28.

3. The metre shall be used as the standard of measurement for lengths, distances, heights and depths, reserving for each nation the right to add figures expressing these quantities in its own units.

4. The colours, symbols, and arrangements for production adopted for the International 1: 1,000,000 scale map shall be used as far as practicable on the aeronautical maps.

5. The general maps shall be drawn on Mercators's projection and shall be to a scale of 1 degree of longitude equals 3 centimetres. The general maps shall have marked on them in fine lines the meridians and parallels of each degree, and the meridians and parallels limiting the unit sections of the 1: 1,000,000, map shall be accentuated. The same designation of unit sections shall be used as for the 1: 1,000,000 map.

6. Each general (Mercator) map shall bear the French heading *Carte Générale Aéronautique Internationale* (see the conventional sign plate, Fig. 1), and under it a translation of this heading in the language of the country publishing the map. It shall also bear an appropriate geographical name.

Each sheet shall show at least the following: principal physical features and geographical names, wireless stations, marine lighthouses (height and range at sea level, colour and character of the light); national frontiers, prohibited areas, principal air routes, lines of equal magnetic variation, South Polar distance, latitude, old and new notation of longitude (see paragraph 7), with an outer margin containing letters and numbers referring to the index of the 1: 1,000,000 map, legend of symbols in English or French and in the language of the country publishing the maps, publisher's name, and date of publication and of successive editions.

7. The local maps shall be drawn to a scale of 1: 200,000.

NOTE.—For local aeronautical maps of sparsely inhabited countries, the scale of 1: 500,000 or 1: 1,000,000 as appropriate, may be used.

In addition to the customary latitude and longitude notations, the local aeronautical maps shall bear numbers enclosed in rectangles, corresponding to a new system of co-ordinate reckoning based on the antimeridian of Greenwich and the south Pole. The new *grid* reckoning, with regard to latitude, shall commence with the South Pole as zero and increase northward by degrees and minutes to 180° at the North Pole, and with regard to longitude shall commence with the antimeridian of Greenwich as zero and run eastward by degrees and minutes to 360°.

8. Each unit sheet of the local aeronautical maps shall bear the French heading *Carte Normale Aéronautique Internationale* (see the conventional sign plate, Fig. 2), and under it a translation of this heading in the language of the country publishing the map. It shall comprise one

degree of latitude and one degree of longitude, and shall be designated by a locality name and by the new co-ordinates described in paragraph 7) of the south-west corner of the sheet, the unit digits being accentuated. In these designating co-ordinates, the figures referring to the South Polar distance shall invariably be written first.

EXAMPLES.—The sheet whose southern boundary is 49° N. (*i.e.*, 139° South Polar distance) and western boundary 2° E. (*i.e.*, 182° from the antimeridian of Greenwich) will be numbered 139-182.

Or the sheet whose southern boundary is 36° S. (*i.e.*, 54° South Polar distance) and western boundary 7° W. (*i.e.*, 173° from the antimeridian of Greenwich) will be numbered 54-173.

9. The local aeronautical unit sheets shall show, as far as the data is known, the following:—

(a) *Within the limiting Meridians and Parallels*.—Twenty minute projection grid; roads divided into two classes, according to their relative visibility from the air; railways of all kinds, cities and towns in outline, and the plan of the principal public roads crossing them (villages similarly if practicable, otherwise their positions indicated); principal features of the surface water system; woodlands and other areas unsuitable for landing, aerodromes, hangars for airships, plants for balloon inflation, permanent landing places on ground and water, aeronautical ground marks (beacons and fixed navigational lights), marine light-houses (height, range at sea level, colour and character of the light); wireless stations, meteorological stations, overhead electric power lines, remarkable objects, national frontiers, prohibited areas, principal air routes, names of important bodies of water, towns, and important villages; the topographical relief by shading and figures indicating heights, the most important of which to be surrounded by an oval ring as

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(b) *Outside the limiting Meridians and Parallels*.—A title, consisting of the name designating the locality and the index numbers of the sheet; a border scale graduated to minutes; the names of the neighbouring sheets; latitude, South Polar distance, old and new notation of longitude (*see* paragraph 7); scale of kilometres; legend of symbols in English or French and in the language of the country publishing the map; magnetic variation diagram; key map showing abridged numbers of the sheet concerned and the eight surrounding sheets; frontiers and the names

of the countries, parts of which are embraced by the key map; publisher's name and date of publication.

10. The forms of the general and local maps, titles, marginal notations, diagrams, and legends, shall be as shown by the accompanying illustrations.

11. The general and local aeronautical maps and guide books of the areas traversed by the most important routes which may be established by international agreement shall be prepared first.

NOTE.—On account of the inadequacy of the usual methods of topographic mapping for making aeronautical maps, it is strongly recommended that steps be taken to survey from the air the areas along the most important international routes. Such surveys would furnish indispensable information regarding the features necessary to be shown on the maps the aviator is to use.

SECTION II.

UNIVERSAL SYSTEM OF GROUND MARKS.

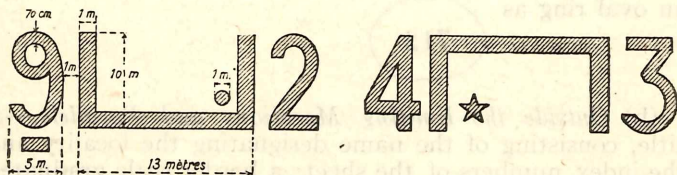
1. All ground marks shall conform with the scheme of numbering adopted for the unit sheets of the local international aeronautical maps.

For this purpose each mark shall show (*see* the diagrams):

(a) The abridged number which designates the sheet within which it lies;

(b) An open rectangle, whose short sides shall be oriented north-south; the frames shall be open towards the opposite half of the unit sheet;

(c) A dot indicating the approximate position of the mark on the north or south half of the corresponding unit sheet.



Arrangement of mark for south half of unit sheet.
The short sides of the frame shall be oriented true north-south.

Arrangement of mark for north half of unit sheet having the same orientation of short sides.

The numbers shall be placed close to the frame at the top, bottom or sides, but not inside.

Where marks are placed so close to each other as to admit of possible confusion, the round dot may be replaced by a square, triangular or star-shaped dot.

It is recommended that the minimum dimensions of the marks be those indicated in the sketches.

2. Special attention shall be given to the distribution of marks along chosen international routes.

NOTE.—Steps to establish suitable marks for landing at night shall be eventually taken, in accordance with the decision of the International Commission for Air Navigation.

ANNEX G.

COLLECTION AND DISSEMINATION OF METEOROLOGICAL INFORMATION.

1. Nature and object of meteorological information to be furnished by Contracting States:—

(A) "Statistical" is required for the purpose of indicating the degree of safety and convenience of different routes or aerodromes for different types of aircraft.

It consist of:—

(a) Analysis and summaries of past meteorological records.

(b) Summaries of current observations.

(B) "Current" is required for the purpose of:—

(a) Keeping a current record of the weather.

(b) Making forecasts.

It consists of:—

1. The results of daily observations.

2. Lists of active stations at which these observations are taken.

(C) "Forecasts" are for the purpose of telling all concerned when and where flying is possible and the best conditions for the same. They are statements of conditions anticipated:—

(a) "Short period" during the next three or four hours.

(b) "Normal" during the next 20 to 30 hours.

(c) "Long period" during the next two or three days.

(d) "Route" for particular region or route during the next six hours.

2. Methods and times of furnishing the different types of information:—

(A) "Statistical" is furnished by Central Meteorological Offices for general information.

(a) Analysis and summaries of past records—by the publication of special handbooks giving averages, frequencies, and extremes of the principal meteorological elements, together with charts and diagrams; prominence to be given to meteorological conditions of areas known to have special meteorological peculiarities.

(b) Summaries of current observations—by the monthly publication of the information obtained each month.

(B) "Current" is furnished by meteorological offices to meteorological offices.

(a) Results of daily observations—telegraphically by:—

1. Regular reports at fixed hours (*see* Appendix I) and
2. By special reports at intermediate times when requested (*see* Appendix II).

(b) Lists of stations whenever necessary, to keep other countries informed where observations are being taken, giving also local topographical details affecting weather conditions at each station.

(c) "Forecasts" are furnished by meteorological offices for general information by publication in the public press, telegraphically to other countries if required, or any other, the best, means, to bring them to the notice of these requiring them (*see* Appendix III).

APPENDIX I.

REGULAR REPORTS.

These are of two kinds:—

1. Individual station reports.
2. Collective station reports.

1. Individual station reports are the results of observations of individual stations, taken at 0100, 0700, 1300, and (1800 or) 1900 G.M.T. The reports are made as soon as the observation has been taken and are rendered to a central collecting station or office; where reports for only two of these hours are possible or sufficient, the hours

should be separated by an interval of twelve hours. (It is recommended that the standard hours be changed to 0300, 0900, 1500 and 2100 G.M.T. by international agreement.)

Reports will give information on the following, whenever possible:—

1. Wind.
2. Pressure.
3. Temperature and humidity.
4. Fog and visibility.
5. Clouds.
6. Precipitation.
7. Thunderstorms, hurricanes, tornadoes, dust-storms.
8. Other weather phenomena.
9. State of sea,

and also on upper air currents and upper air temperature and humidity, from stations where facilities are available for observation.

Reports will be made in the general form and in the codes given in Appendix IV.

2. Collective reports are a collection of the individual reports received by a central station or office and transmitted to other central offices. They are of three classes:

Class 1.—The central office in this case is usually the main office of a country; it transmits its reports, within $1\frac{1}{2}$ hours of the time the observations are taken at the individual stations, to all main offices of other countries within a radius of 1,500 kilometres.

Class 2.—These are reports made for the purpose of giving countries over 1,500 kilometres distant information essential to making their own forecasts. The central office is that of a selected State which possesses a high-power wireless station capable of worldwide ranges (minimum range 3,000 kilometres). The report is made within three hours of the observations, and is a collection of reports selected from the Class 1 reports and abridged (*see* Appendix IV). It should include a forecast of conditions in the country of origin.

Class 3.—These are local reports made by local centres to other local centres (any within 500 kilometres). The report is a collection of reports, selected from the Class I reports from stations in the vicinity and abridged (*see* Appendix IV). It is made within thirty minutes of the time of observation.

APPENDIX II.

SPECIAL REPORTS.

Special reports give the results of continuous observations at aerodromes having meteorological stations on recognized air routes. They are to be rendered within thirty minutes of a request from a central office on a specified aerodrome on the route. The maximum distance from which these reports will be required is 500 kilometres. The requests may take the form of a demand for hourly reports.

The reports are rendered by telephone or wireless, and may be from one country to another in the case of an international air route. The reports when made by telegram will be in the form and code given in Appendix IV.

APPENDIX III.

FORECASTS.

Short-period forecasts covering three to four hours will give a statement of the anticipated conditions of cloud, weather, surface wind, and visibility, together with direction and speed of wind at heights of 1,000 and 2,000 metres, and an estimate of meteorological fitness for different types of aircraft.

Normal forecasts for twenty to thirty hours will give similar information, but in more general terms.

Long-period forecasts give a general statement of the prospects for the next two or three days.

Route forecasts are made twice daily by central offices from information received from individual stations and will give a statement of conditions anticipated in the different regions or routes of the country for about six hours ahead.

APPENDIX IV.

GENERAL FORM IN WHICH REPORTS ARE TO BE RENDERED AND CODES FOR THEIR TRANSMISSION.

Individual stations will be allotted station call signs, *i.e.*, an index group of letters or figures which will be used in all reports to indicate the station, and will also serve as the wireless call sign. These should be internationally distinct.

The general form is given in meteorological symbols or letters. For purposes of transmission an appropriate figure value is given to each symbol or letter in accordance with the codes given below.

METEOROLOGICAL SYMBOLS OR LETTERS AND THEIR SIGNIFICATION.

Standard symbols.

BBB = barometer reduced to sea-level and expressed in millibars and tenths, *i.e.*, corrected for temperature gravity and index error. The initial 9 or 10 is omitted.

DD = direction of wind (true direction as distinguished from magnetic) at a height of 10-15 metres above the surface expressed on scale 1-72 (*see* Code XI.).

F = force of wind on Beaufort scale (wind above force 9 to be specially noted at end of telegram).

ww = present weather (Code I.).

TT = temperature in degrees A (0° A = -273° C, 273° A = 0° C), first figure omitted.

A = form of low cloud (Code III.).

L = amount of low cloud (in tenths of sky covered, amount 10 telegraphed as 0).

B = form of medium or high cloud (Code III.).

M = amount of medium or high cloud in tenths.

h = height of base of low cloud (Code IV. (a)).

WW = past weather (Code II.).

V = visibility (Code V.).

H¹ = relative humidity (Code VI.).

- S = state of sea (Code VII.).
 B = characteristic of barometric tendency (Code IX.).
 bb = amount of barometric tendency in half millibar per 3 hours; 50 added for negative tendencies.
 F¹ = fitness of weather conditions for flying machines (Code VIII. (a)).
 F² = fitness of weather conditions for airships (Code VIII. (b)).
 RR = rainfall: (i) in day, (ii) in night; in millimetres and tenths.
 MM = maximum temperature in the day.
 mm = maximum temperature in the night.
 X = reserve figure.

SPECIAL SYMBOLS FOR UPPER AIR CURRENTS.

- H = height (Code IV. (b)).
 DD = direction on scale 1-72 (*i.e.*, to nearest 5° (*see* Code XI.)).
 VV = speed in kilometres per hour (for speed above 99 K/hr use three figures).

SPECIAL SYMBOLS FOR UPPER AIR TEMPERATURE AND HUMIDITY.

- p = height or pressure (Code IV. (c)).
 HH = actual percentage of relative humidity.

SPECIAL SYMBOL FOR COLLECTIVE REPORTS. CLASS 2.

- BB = barometer in whole millibars with the initial 9 or 10 omitted.

GENERAL FORMS OF MESSAGES IN METEOROLOGICAL SYMBOLS.

REGUMAR REPORTS.

1. *Individual Station Reports.*—Station call sign followed by the following group:—

BBBDD. FwwTT. ALBMh. wwVHS. β bbF¹F².
 RRMMX (or RRmmX).

Additional two groups for reports from Stations having facilities for observations of upper air currents; the first of these being:—

A five figure group to indicate that upper air current information is contained in the group which follows and which has the general form HDDVV.

Additional two groups for reports from stations having facilities for observations of upper air temperature and humidity; the first of these being:—

A five figure group to indicate that upper air temperature and humidity information is contained in the group which follows and which has the general form *p*TTHH.

(NOTE.—These indicative five figure groups would be better, from a signalling point of view, as a special Morse signal.)

2. *Collective Station Report, Class 1.*—The individual station reports are given in sequence in the same general form as above. Upper air conditions are given at the end for those stations for which available: upper air currents being given only for the following heights, 500, 1,000, 2,000, 5,000 metres (see Code IV. (b)).

Example of general form of collective report (Class 1) giving information from four stations, A, B, C, D, of which stations B, C have given upper air currents, and stations B, D upper air temperatures and humidity.

Call sign for "A"—

BBBDD—FwwTT—ALBMh—wwVHS— β bbF₁F₂

Call sign for "B"—

BBBDD—FwwTT—ALBMh—wwVHS— β bbF₁F₂

Call sign for "C"—

BBBDD—FwwTT—ALBMh—wwVHS— β bbF₁F₂

Call sign for "D"—

BBBDD—FwwTT—ALBMh—wwVHS— β bbF₁F₂

Group or signal indicating that upper air current information follows.

Call sign for "B"—HDDVV.

Call sign for "C"—HDDVV.

Group indicating that upper air temperature and humidity information follows.

Call sign for "B"—*p*TTHH.

Call sign for "D"—*p*TTHH.

3. *Collective Station Reports, Class 2.*—The individual station reports are given in sequence in an abridged form, as follows: Call sign for station—BBDDF—wwTTh—AL β bb.

Upper air currents are given at the end of the telegram for heights 2 000 and 5,000 metres for selected stations.

Example of general form of collective report (Class 2) giving information from four stations A, B, C, D, of which stations "B," "C" are selected for upper air current conditions.

Call sign for "A"—BBDDF—wwTTh—AL β bb.

Call sign for "B"—BBDDF—wwTTh—AL β bb.

Call sign for "C"—BBDDF—wwTTh—AL β bb.

Call sign for "D"—BBDDF—wwTTh—AL β bb.

Group indicating that upper air current information follows.

Call sign for "B"—HDDVV.

Call sign for "C"—HDDVV.

Forecast of conditions in country of origin.

4. *Collective Station Reports, Class 3.*—The individual station reports are given in sequence in an abridged form as follows:—

Call sign of station—DDFF₁F₂—ALBMh—wwWWV.

Note 1.—The general form for transmission "of special reports" and of forecasts has not yet been formulated.

Note 2.—Observations from ships at sea and the transmission of such observations require special arrangements which it has not yet been possible to formulate. Similarly for observation from aircraft and their transmission.

CODES.

Code I.—*Present Weather.*—*wv.*

Note.—00 to 49 weather without precipitation.
50 to 70 and 77 to 97 with precipitation.

In Codes I and II, r=rain, d = drizzle, h=hail, s=snow, rs=sleet.
tlr=thunderstorm, e=wet air, f=fog (see Code V).

No Mist or Fog.

- 00 Absolutely cloudless.
- 01 Cloudless than $\frac{1}{2}$.
- 02 About $\frac{1}{2}$ clouded.
- 03 About $\frac{3}{4}$ clouded.
- 04 Overcast, but small amount of blue visible.
- 05 Absolutely overcast.

Haze, Mist or Fog, but no precipitation.

- 06 Overcast and 1f.
- 07 " " 2f.
- 08 " " 3f.
- 09 " " 4f.
- 10 " " 5f.
- 11 " " 6f.
- 12 " " 7f.
- 13 " " 8f.
- 14 Haze 1f.
- 15 " 2f.
- 16 Fog 3f.
- 17 " 4f.
- 18 " 5f.
- 19 " 6f.
- 20 " 7f.
- 21 " 8f.
- 22 Mist 1fe.
- 23 " 2fe.
- 24 Fog 3fe.
- 25 " 4fe.
- 26 " 5fe.
- 27 " 6fe.
- 28 " 7fe.
- 29 " 8fe.

Special Phenomena without precipitation.

- 30 e (wet air).
- 31 Exceptional visibility.
- 32 Dust Haze.
- 33 Dew.
- 34 Hoar Frost.
- 35 Rime.
- 36 Glazed Frost.
- 37 Glazed Roads.
- 38 Solar Halo.
- 39 Lunar Halo.
- 40 Solar Corona.
- 41 Lunar Corona.
- 42 Aurora.
- 43 Squalls.
- 44 Gale.
- 45 Gloom.
- 46 Ugly: threatening.
- 47 Thunder.
- 48 Lightning.
- 49 Thunder and Lightning.

Precipitation and Fog (50-58).

- 50 Slight r
 - 51 Moderate r
 - 52 Heavy r
 - 53 Slight r
 - 54 Moderate r
 - 55 Heavy r
 - 56 Slight r
 - 57 Moderate r
 - 58 Heavy r
- } 2f. or 3f.
- } 4f. or 5f.
- } 6f. to 8f.

Precipitation and Squalls of Wind (59-70).

- 59 Slight r.
- 60 Moderate r.
- 61 Heavy r.
- 62 Slight h.
- 63 Moderate r and h.
- 64 Heavy r and h.
- 65 Slight rs.
- 66 Moderate rs.
- 67 Heavy rs.
- 68 Slight s.
- 69 Moderate s.
- 70 Heavy s.

Snow Covering.

- 71 s over whole country.
- 72 s with bare patches.
- 73 Deep drifts.
- 74 }
- 75 } Reserve figures.
- 76 }

Precipitation (77-97).

- 77 Slight d.
 - 78 Moderate d.
 - 79 Thick d.
 - 80 Slight r.
 - 81 Moderate r.
 - 82 Heavy r.
 - 83 Slight h.
 - 84 Moderate h.
 - 85 Heavy h.
 - 86 Slight rs.
 - 87 Moderate rs.
 - 88 Heavy rs.
 - 89 Slight s.
 - 90 Moderate s.
 - 91 Heavy s.
 - 92 Slight tlr
 - 93 Moderate tlr
 - 94 Heavy tlr
 - 95 Slight tlr
 - 96 Moderate tlr
 - 97 Heavy tlr
 - 98 } Reserve Figures.
 - 99 }
- } Without hail
- } With hail.

Code II.—Past Weather.—WW.

Note.—00–49 Weather without precipitation.
50–97 Weather with precipitation.

No Precipitation or Fog (00–14).

- 00 equals Cloudless.
01 " b and bc; med. or high cloud.
02 " b and bc; low cloud.
03 " b and bc; mixed cloud.
04 " bc and c; med. or high cloud.
05 " bc and c; low cloud.
06 " bc and c; mixed cloud.
07 " c and o; med. or high cloud.
08 " c and o; low cloud.
09 " c and o; mixed cloud.

Overcast with blue patches (10–12).

- 10 equals med. or high cloud.
11 " low cloud.
12 " mixed cloud.
13 " completely overcast; low or mixed cloud.
14 " b and o; low or mixed cloud.

Fog with Cloud above (15–19).

- 15 equals overcast and 1f.
16 " overcast and 2f.
17 " overcast and 3f.
18 " overcast and 4f or 5f.
19 " overcast and 6f to 8f.

Haze or Fog (20–24).

- 20 equals Haze 1f.
21 " Haze 2f.
22 " Fog 3f.
23 " Fog 4f. or 5f
24 " Fog 6f. to 8f.

We Fog or Mist (25–29).

- 25 equals Mist 1fe.
26 " Mist 2fe.
27 " Fog 3fe.
28 " Fog 4fe. or 5fe.
29 " Fog. 6fe. to 8fe.

Special Phenomena without Precipitation (30–49).

- 30 equals e (wet air).
31 Exceptional visibility.
32 Dust Haze.
33 Due.
34 Hoar Frost.
35 Rime.
36 Glazed Frost.
37 Glazed Roads.
38 Solar Halo.
39 Lunar Halo.
40 Solar corona.
41 Lunar corona.
42 Aurora.
43 Squalls.
44 Gale.
45 Gloom.
46 Ugly; threatening.
47 Thunder.
48 Lightning.
49 Thunder and Lightning.

*Precipitation.**Passing Showers (50–61).*

- 50 of slight
51 of moderate } rain.
52 of heavy
53 of slight
54 of moderate } hail or r and h.
55 of heavy
56 of slight
57 of moderate } rs or r and rs.
58 of heavy
59 of slight snow.
60 of moderate snow.
61 of heavy snow.

Occasional Precipitation (62–76).

- 62 occasional slight d.
63 " moderate d.
64 " thick d.
65 " slight r.
66 " moderate r.
67 " heavy r.
68 " slight r and h.
69 " moderate r and h.
70 " heavy r and h.
71 " slight
72 " moderate } rs or r and rs.
73 " heavy
74 " slight s.
75 " moderate s.
76 " heavy s.

Continuous or nearly Continuous Precipitation (77–91).

- 77 slight
78 moderate } drizzle.
79 thick
80 slight
81 moderate } rain
82 heavy
83 slight
84 moderate } r and hail.
85 heavy
86 slight
87 moderate } rs or r and rs.
88 heavy
89 slight
90 moderate } snow.
91 heavy

Thunderstorms (92–97).

- 92 slight tlr
93 moderate tlr } without hail
94 heavy tlr
95 slight tlr
96 moderate tlr } with hail.
97 heavy tlr
98 Reserve Numbers.
99

Code III.—Form of Cloud. { Low Cloud.—A.
Medium or High Cloud.—B.

Low Cloud:	1	equals	Fracto Cumulus.
	2	"	Mammato Cumulus.
	3	"	Low Strato Cumulus (below 1200 m.).
	4	"	High Strato Cumulus (above 1200 m.).
			Nimbus.
	6	"	Cumulus.
	7	"	Cumulo Nimbus.
	8	"	Stratus.
High Cloud:	1	"	Cirrus.
	2	"	Cirro Stratus.
	3	"	Cirro Cumulus.
	4	"	False Cirrus.
Medium Cloud:	5	"	Thin Alto Stratus (Sun or Moon visible).
	6	"	Thick Alto Stratus.
	7	"	Alto Cumulus (low) (below 3 km.).
	8	"	Alto Cumulus (high) (above 3 km.).

Code IV (a), (b), (c)—Heights and Pressures of Upper Air Reports.

Code IV (a).—Height of base of Low Cloud.—h.				Code IV (b).—Height of Upper Wind.—H			
0	equals	cloud below	150	1	equals	200	metres
1	"	cloud below	150-300	2	"	500	"
2	"	cloud below	300-500	3	"	1000	"
3	"	cloud below	500-750	4	"	1500	"
4	"	cloud below	750-1000	5	"	2000	"
5	"	cloud below	1000-1500	6	"	3000	"
6	"	cloud below	1500-2000	7	"	4000	"
7	"	cloud below	2000-2500	8	"	5000	"
8	"	cloud below	2500-3000				
9	"	no low cloud.					

Code IV (c).—Height or Pressure to which Temperature and Humidity Values refer—p

0	equals	surface.	5	equals	pressure of 850 mb.
1	"	300 metres above surface.	6	"	pressure of 800 mb.
2	"	pressure of 1000 mb.	7	"	pressure of 750 mb.
3	"	pressure of 950 mb.	8	"	pressure of 700 mb.
4	"	pressure of 900 mb.	9	"	pressure of 600 mb.

Code V.—Surface Visibility and Fog.—V.

Code figure.	Most distant object visible.	Description.	Code figure.	Most distant object visible.	Description.
0	less than 25 metres	8 f	4	2000 metres	2 f or 3 V
	25 metres	7 f	5	4000 "	2 f or 4 V
1	50 "	6 f	6	7000 "	1 f or 5 V
	100 "	5 f	7	12000 "	1 f or 6 V
2	200 "	4 f	8	20000 "	7 V
	500 "	3 f or 1 V		30000 "	8 V
3	1000 "	3 f or 2 V	9	above 30000 and clear air	9 V

Code VI.—Relative Humidity.—H.

Code figures.		Code figures.	
0	equals 95-100 per cent.	5	equals 50-59 per cent
9	" 90-94 "	4	" 40-49 "
8	" 80-89 "	3	" 30-39 "
7	" 70-79 "	2	" 20-29 "
6	" 60-69 "	1	" 10-19 "

Code VII.—State of Sea.—S.

Code figure.	Description.	Code figure.	Description.
0 equals	Calm—glassy.	5 equals	Rather rough—much furrowed.
1 "	Very smooth—slightly rippled.	6 "	Rough—deeply furrowed.
2 "	Smooth—rippled.	7 "	High rollers, steep fronts.
3 "	Slight—rocks buoy.	8 "	Very high rollers, steep fronts.
4 "	Moderate furrowed.	9 "	Phenomenal—precipitous.

*Code VIII (a) and (b).—Fitness for Flying.**Code VIII (a).—Fitness for Aeroplanes.*

Code figure.	Description.
0 equals	entirely unfit: fog.
1 "	entirely unfit: rain and low cloud.
2 "	entirely unfit: gales.
3 "	very risky: mist.
4 "	very risky: wind and weather.
5 "	risky: mist.
6 "	risky: wind and weather.
8 "	very fit.
7 "	fit.
9 "	perfect.

Code figure.

Code figure.	Description.
0 equals	entirely unfit: fog.
1 "	entirely unfit: rain, wind and low cloud.
2 "	entirely unfit: gales.
3 "	very risky: high wind.
4 "	very risky: occasional squalls.
5 "	risky: strong wind.
6 "	risky: slight squalls.
7 "	fit.
8 "	very fit.
9 "	perfect.

Code IX.—Characteristic of Barometric Tendency.—B.

Code figure.	Description.	Code figure.	Description.
0 equals	steady.	6 equals	steady, then falling.
1 "	unsteady	7 "	falling, now steady.
2 "	rising.	8 "	rising, now steady or falling.
3 "	falling.	9 "	line squall; sudden rise with marked change of wind and weather.
4 "	falling, then rising.		
5 "	steady, then rising.		

Code X.—Direction of Wind.—DD.

Direction is specified to the nearest 5° by use of the numbers 1—72. The numbers corresponding with the usual "even" points of the old telegraphic scale are as follows:—

04 equals	NNE.
09 "	NE.
13 "	ENE.
18 "	East.
22 "	ESE.
27 "	SE.
31 "	SSE.
36 "	South.

40 equals	SSW.
45 "	SW.
49 "	WSW.
54 "	West.
58 "	WNW.
63 "	NW.
67 "	NNW.
72 "	North.

To express directions calculated in degrees in this scale, divide the number of degrees by 5 (or multiply by 2 and divide by 10).

e.g., 17° equals 03; 53° equals 11; 257° equals 51; 313° equals 63

ANNEX H.

CUSTOMS.

GENERAL PROVISIONS.

1.

Any aircraft going abroad shall depart only from aerodromes specially designated by the customs administration of each contracting State, and named "customs aerodromes."

Aircraft coming from abroad shall land only in such aerodromes.

2.

Every aircraft which passes from one State into another is obliged to cross the frontier between certain points fixed by the contracting States. These points are shown on the aeronautical maps.

3.

All necessary information concerning customs' aerodromes within a State, including any alterations made to the list and any corresponding alterations necessary on the aeronautical maps and the dates when such alterations become valid, and all other information concerning any International aerodromes which may be established, shall be communicated by the States concerned to each other and to the International Commission for Air Navigation, which shall notify such information to all of the contracting States. The contracting States may agree to establish international aerodromes at which there may be joint customs service for two or more States.

4.

When, by reason of a case of *force majeure*, which must be duly justified, an aircraft crosses the frontier at any other point than those designated, it shall land at the nearest customs aerodrome on its route. If it is forced to land before reaching this aerodrome it shall inform the nearest police or customs authorities.

It will only be permitted to leave again with the authorization of these authorities, who shall, after verification, stamp the log-book and the manifest provided for in paragraph 5; they shall inform the pilot of the customs aerodrome where he must necessarily carry out the formalities of customs clearance.

5.

Before departure, or immediately after arrival, according to whether they are going to or coming back from a foreign country, pilots shall show their log-books to the authorities of the aerodrome and, if necessary, the manifest of the goods and supplies for the journey which they carry.

6.

The manifest is to be kept in conformity with the attached form N° 1.

The goods must be the subject of detailed declarations in conformity with the attached form N° 2, made out by the senders.

Every contracting State has the right to prescribe for the insertion either on the manifest or on the customs declaration of such supplementary entries as it may deem necessary.

7.

In the case of an aircraft transporting goods the customs officer, before departure, shall examine the manifest and declarations, make the prescribed verifications and sign the log-book as well as the manifest. He shall verify his signature with a stamp. He shall seal the goods or sets of goods, for which such a formality is required.

On arrival the customs officer shall ensure that the seal is unbroken, shall pass the goods, shall sign the log-book and keep the manifest.

In the case of an aircraft with no goods on board, the log-book only shall be signed by the police and customs officials.

The fuel on board shall not be liable to customs duties provided the quantity thereof does not exceed that needed for the journey as defined in the log-book.

8.

As an exception to the general regulations, certain classes of aircraft, particularly postal aircraft, aircraft

belonging to aerial transport companies regularly constituted and authorized and those belonging to members of recognized touring societies not engaged in the public conveyance of persons or goods, may be freed from the obligation of landing at a customs aerodrome and authorized to begin or end their journey at certain inland aerodromes appointed by the customs and police administration of each State at which customs formalities shall be complied with.

However, such aircraft shall follow the normal air-route, and make their identity known by signals agreed upon as they fly across the frontier.

REGULATIONS APPLICABLE TO AIRCRAFT AND GOODS.

9.

Aircraft landing in foreign countries are in principle liable to customs duties if such exist.

If they are to be re-exported, they shall have the benefit of the regulations as to permit by bond or deposit of the taxes.

In the case of the formation between two or more countries of the Union of touring societies, the aircraft of the said countries will have the benefit of the regulations of the "Tryptique."

10.

Goods arriving by aircraft shall be considered as coming from the country where the log-book and manifest have been signed by the customs officer.

As regards their origin and the different customs régimes, they are liable to the regulations of the same kind as are applicable to goods imported by land or sea.

11.

With regard to goods exported in discharge of a temporary receiving or bonded account or liable to inland taxes, the senders shall prove their right to send the goods abroad by producing a certificate from the customs of the place of destination.

AIR TRANSIT.

12.

When an aircraft to reach its destination must fly over one or more contracting States, without prejudice to the right of sovereignty of each of the contracting States, two cases must be distinguished:—

1. If the aircraft neither sets down nor takes up passengers or goods, it is bound only to keep to the normal air-route and make itself known by signals when passing over the points designated for such purpose.

2. In other cases, it shall be bound to land at a customs aerodrome and the name of such aerodrome shall be entered in the log-book before departure. On landing, the customs authorities shall examine the papers and the cargo, and take, if need be, the necessary steps to ensure the re-exportation of the craft and goods or the payment of the dues.

The provisions of paragraph 9 (2) are applicable to goods to be re-exported.

If the aircraft sets down or takes up goods, the customs officer shall verify the fact on the manifest, duly completed, and shall affix, if necessary, a new seal.

VARIOUS PROVISIONS.

13.

Every aircraft during flight, wherever it may be, must conform to the orders from police or customs stations and police or customs aircraft of the State over which it is flying.

14.

Customs officers and excise officials, and generally speaking the representatives of the public authorities shall have free access to all starting and landing places for aircraft; they may also search any aircraft and its cargo to exercise their rights of supervision.

15.

Except in the case of postal aircraft, all unloading or throwing out in the course of flight, except of ballast, may be prohibited.

16.

In addition to any penalties which may be imposed by local law for infringement of the preceding regulations, such infringement shall be reported to the State in which the aircraft is registered, and that State shall suspend for a limited time, or permanently, the certificate of registration of the offending aircraft.

17.

The provisions of this Annex do not apply to military aircraft visiting a State by special authorization (Articles 31, 32, and 33 of the Convention), nor to police and customs aircraft (Articles 31 and 34 of the Convention).

Note.—The manifest should not bear on its erasures or corrections except those approved by the proper customs officials, nor contain interlineations or several articles entered on the same line. As many extra sheets may be added as are necessary.

FORM N° 1.

AIR NAVIGATION.

MANIFEST

OR GENERAL DECLARATION OF CARGO.

Space reserved for entries by Customs Officers.	MACHINE.....	{ Registration Mark. Name: Residence: Nationality: Number of Licence: Place of departure: Country: Place of destination: Country: Number of annexed declarations:
	COMMANDING OFFICER.	
	GOODS.....	

The Commanding Officer guarantees the accuracy of the contents of this manifest under penalties provided by law. Consequently he has dated and signed this document immediately below the last entry.

File Number of Document.	Marks and Numbers on the Parcels.	Number (in Figures and Letters) and Descriptions of Parcels.	Nature of the Goods.	Weight.	Observations.

AIR NAVIGATION

FORM N° 2.

Place of departure:

Customs declaration made by M.

Place of destination:

for the following goods:

Marks and Numbers.	Nature of Goods.	Detailed	Description of Contents.	Country of Origin.	Value.	Weight.		Observations.
						Gross.	Net.	

At the day of 19

Consignor,

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NOTE.—Numbers in italics refer to Convention relating to International Air Navigation.

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